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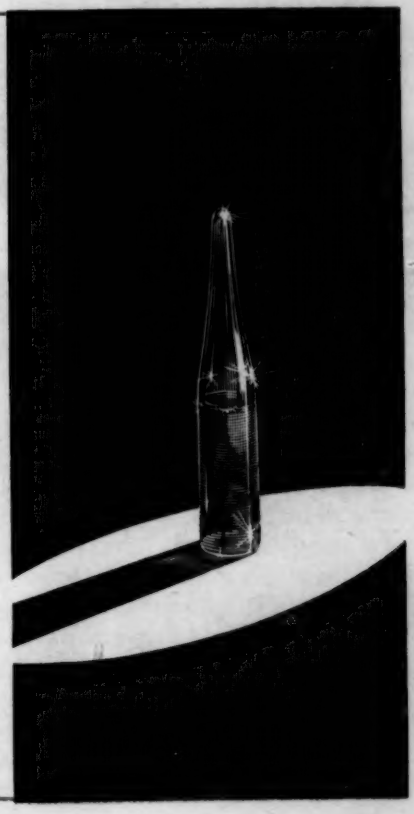

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SPECIFIC READING DISABILITY*

A Familial Syndrome Associated with Ambidexterity and Speech Defects and a Frequent Cause of Problem Behavior

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BOSTON

CHILDREN who have not learned to read or to read fluently and with understanding are almost disgracefully numerous in our schools. Educational literature gives no clear picture of why this is so. The list of reasons advanced for their failure is a long one and includes such items as low intelligence, physical illness, malnutrition, visual and auditory defects, immaturity, lack of interest, emotional blocking and poor teaching. The viewpoint of the majority of teachers and child psychologists is clearly expressed by Witty and Kopel,[1] who, after a full discussion of the various causes, state emphatically that there is no single specific cause, but that causation must be sought in a composite of related conditions.

On the other hand, physicians[2–9] and a few educators[10–12] maintain that buried in the amorphous mass of children who fail for a multiplicity of reasons — physical, mental, psychologic and social — is a hard kernel of children of a distinctive type. They are predominantly boys whose weakness in the use of language‡ is definitely out of keeping with their skills in other directions, particularly in arithmetic. Many are late in learning to talk and, when they do talk, are likely to lisp or stutter. They are apt to be more or less ambidextrous. Their family trees, when accurate histories are obtainable, are found to contain a large number of similar persons. When such children are studied, it becomes clear that in this restricted group there does exist a single factor that plays a large part in their reading difficulties. This factor is believed to be an inherited sex-associated weakness of the language function combined with a tendency to ambidexterity. The name given to this syndrome is "specific language disability." When the difficulty is chiefly with reading, it is called "specific reading disability" or "strephosymbolia" (Orton[3]).

This disagreement between educators and psychologists on the one hand and physicians on the other would be of no practical import were it not for the fact that most schools fail to separate children with specific reading disability from other poor readers. The result is often tragic failure for the children with the specific disability.

This is a report on 23 carefully studied children with specific reading disability. They were selected from a larger group of 33 who were examined because of school failure or problem behavior. For the 10 children eliminated from the group the diagnoses were encephalitis, low I.Q., hypothyroidism, poor teaching and poor discipline.

MATERIAL AND METHODS

The children in this group were followed for an average of eight years — some for as few as two years, and others for as many as sixteen. All were private patients coming from twenty-one families. The status of all but one of the homes was known: two could be classed as high average, and the others as definitely superior. The occupations of the fathers were as follows: business, 9; university professor, 7 (4 of these were physicians); professional, 3; gentleman farmer, 1; and clerical, 1.

Seventeen children attended private schools of excellent reputation. Six had started in public school in good residential districts, but 5 of them, when their difficulties were recognized, changed permanently or temporarily to selected private schools where individual tutoring could be supplied.

These 23 children were in normal physical condition except for one with hemiplegia. The vision of 20 either was normal or had been corrected by glasses. Three had defective vision in one eye only; their hearing was normal. Psychometric tests

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‡Language is an inclusive term for speech, reading, writing and spelling.

(Stanford–Binet) on 17 gave results ranging from an I.Q. of 85 to one of 136. The true levels were probably a few points higher, since it is generally admitted that children with specific reading disability are handicapped in certain of the tests. There were only 5 with levels below 100, and their performance was judged according to their mental ages. Because their parents opposed it, 6 were not tested, but these children were well known by the examiner, who considered their intelligence to be at least normal.

The group were given standardized scholastic achievement tests that graded skill in arithmetic, silent reading, oral reading, reading speed and spelling. All made scores in arithmetic that corresponded approximately to the mental age. In their reading and spelling skills, however, they were from one to three or even four grades behind. They either were unable to read or read slowly and without much understanding. Frequently, they failed to recognize simple words and tended to confuse such letters as "b" and "d," and to reverse short words such as "on" for "no" and "was" for "saw" or syllables such as "astrep" for "repast." The handwritings were, in general, poor, and the spelling was worse. Because of this specific failure in reading, which was out of all proportion to their skill in other lines, these children were classed as cases of specific reading disability.

They were also tested to determine the leading hand and eye. Note was made of any defect in speech. The parents were questioned on previous defects in speech or delay in learning to talk, as well as on a family history of other members who were left-handed or ambidextrous or who had speech defects or difficulty in reading and spelling. Here the examiner's knowledge of the family was a great help in uncovering otherwise forgotten details. A note was also made of any unusual behavior on the part of the children.

Young infants are equally clumsy with both hands and should therefore be described as ambilateral instead of ambidextrous. By the end of the second year, one hand has usually been chosen more and more for skilled activities,* and habitual use strengthens and confirms the selection. The majority believe that handedness is determined by Mendelian inheritance,[3, 4, 13] although Blau[14] argues that most people are right-handed because of social and cultural pressure and the minority left-handed because they were strongly negativistic in early childhood. According to the inheritance theory, since mankind is of mixed stock (heterozygous) so far as handedness is concerned, the offspring present a series of intergrades between a few strong dextrals at one end and few strong sinistrals at the other. Practically, however, the race is predominantly right-handed, and has been so since the Bronze Age,[15] although nobody knows why. It seems evident that the pressure of existence in this right-handed world shifts most of the intergrades toward the right.

Laterality tests are used to determine approximately where in this series of intergrades the subject should be placed — that is, whether his handedness is right, right with some left, left with some right or left. Questioning or observation while the subject is performing trained activities such as writing gives results heavily in favor of the right hand.

TABLE 1. *Pertinent Data in 23 Cases of Specific Reading Disability.*

Case No.	Sex	Age at First Examination	Present Age	Behavior Problem	School Failure	Intelligence Quotient	Family History of Disability	Speech Delay
		yr.	yr.					
1	M	7	23	Yes	Yes	96	Yes	—
2	M	6	14	—	Yes	Not tested	Yes	Yes
3	M	11	13	—	Yes	117	Yes	—
4	M	11	16	Yes	—	136	Yes	—
5	M	7	15	Yes	Yes	Not tested	Yes	—
6	M	9	15	—	Yes	107	No	Yes
7	M	7	12	—	Yes	Not tested	Yes	—
8	M	6	14	—	Yes	98	Yes	—
9	M	12	28	—	Yes	120	Yes	—
10	F	8	19	Yes	Yes	Not tested	Yes	—
11	M	10	19	Yes	Yes	121	No	—
12	M	11	22	Yes	Yes	102	No	—
13	M	6	15	—	Yes	117	No data	—
14	M	9	13	Yes	Yes	92	No data	—
15	M	9	18	—	Yes	96	Yes	Yes
16	M	9	16	—	Yes	Not tested	Yes	Yes
17	M	7	21	Yes	Yes	110	Yes	—
18	M	8	12	Yes	Yes	128	Yes	—
19	M	8	17	Yes	Yes	106	Yes	—
20	M	8	10	Yes	Yes	100	Yes	Yes
21	M	6	13	Yes	Yes	100	Yes	Yes
22	F	6	20	Yes	Yes	85	Yes	—
23	F	7	16	—	Yes	Not tested	Yes	—

*Crossed laterality.
†Vision of other eye defective.
‡Patient had hemiplegia.

*Cobb[4] and Blau[14] have presented studies on the relation between handedness and language.

A battery of tests completed while the subject is in ignorance of the examiner's purpose gives a truer picture and usually shows more evidence of partial ambidexterity. The amount of ambidexterity reported varies with the author's definition of the term and the technic used in testing. The consensus seems to be that at least 75 per cent of school children and adults are right-handed and 25 per cent either left-handed or partly ambidextrous.[13, 14]

In these tests the children were asked to use a few simple tools, such as a hammer, screw driver and scissors, and to play a xylophone, throw a ball, swing a bat, wind a watch, wind up a ball of string, play cards, pick up cards dropped on the floor and, finally, write their names and a short sentence. If the subject showed evidence of being partly ambidextrous, he was then asked to write with his nonpreferred hand, and the two signatures were compared. The results were scored as right, right with some left, left with some right and left.

To determine eye preference a few equally simple tests were used, such as asking the subject what he saw through a kaleidoscope, the examiner meanwhile noting which eye was used, having him identify an object held in front of the examiner's face while he was looking through an open cone whose large end covered both eyes, having him look through a small hole, and finally, having him point at the examiner first with the forefinger of one hand, then with the forefinger of the other and lastly with a pencil held simultaneously in both hands. The only precaution needed was to be sure there was no serious visual defect in either eye. The results were scored with the use of the same scale as in the hand tests.

Findings

Table 1 presents the sex, age and presenting complaints of these children, as well as their preferences of hand and eye, degrees of specific reading disability, I.Q.'s, the presence of speech defects or of delay in learning to speak, the existence of similar conditions in the family history and, finally, the type, duration and result of treatment.

Handedness

The hand originally preferred by one boy (Case 12) could not be determined because of hemiplegia. Of the remaining patients only 4 were right-handed, 18 were more or less ambidextrous, and none were left-handed. Eleven of the ambidextrous were right-handed with some left-handed skills. They considered themselves, and on casual observation would be classed as, right-handed. Seven of the ambidextrous were left-handed with some right-handed skills and would similarly be classed as left-handed. Thus, although from questioning or simple observation, 15 of the 22 subjects, or two thirds, would be considered right-handed and 7, or one third, left-handed — a ratio that is approximately the same as that of the general population[13–15] — the truer proportion was only one fifth right-handed, with four fifths more or less ambidextrous and none purely left-handed.

This great preponderance of ambidexterity is in accordance with the reports of physicians[3–9] on handedness in cases of specific reading disability. It is in great contrast to the reports by psychologists and educators, most of whom found no more left-handedness and ambidexterity in poor than in good readers.[1] It is also in great contrast to the generally

TABLE 1 (*Continued*).

Case No.	Speech Defect	Handedness	Eyedness	Degree of Disability	Remedial Treatment		
					by school	by approved tutor	result
					yr.	yr.	
1	Yes	Right with left	Right with left	Moderate	2.3	—	Poor
2	Yes	Right with left	Left with right*	Mild	5.0	—	Good
3	—	Right	Left*	Mild	1.0	—	Good
4	Yes	Right with left	Left†	Mild	No data	—	Good
5	—	Right	Right	Moderate	2.0	—	Good
6	Yes	Left with right	Right*	Mild	2.0	—	Good
7	—	Right with left	Left with right*	Mild	2.0	—	Good
8	—	Left with right	Left with right	Moderate	2.5	—	Poor
9	Yes	Left with right	Left	Severe	1.5	—	Good
10	—	Right with left	Right	Mild	1.0	—	Good
11	—	Left with right	Left	Mild	3.0	0.2	Good
12	—	‡	Left†	Mild	2.0	2.0	Good
13	Yes	Left with right	Right*	Mild	—	0.2	Poor
14	—	Right with left	Right	Mild	1.0	1.0	Good
15	Yes	Right with left	Right	Moderate	1.0	1.5	Poor
16	Yes	Right with left	Left*	Severe	1.0	1.0	Good
17	—	Left with right	Left†	Severe	5.0	1.0	Improvement
18	—	Right	Right	Severe	1.0	3.0	Good
19	Yes	Right with left	Right	Severe	3.0	1.0	Good
20	Yes	Left with right	Right*	Severe	1.0	2.0	Improvement
21	Yes	Right with left	Right with left	Moderate	1.0	1.0	Good
22	—	Right with left	Right	Moderate	5.0	1.0	Improvement
23	—	Right	Right	Moderate	3.0	1.0	Good

*Crossed laterality.
†Vision of other eye defective.
‡Patient had hemiplegia.

accepted standards of handedness in the general population.[13–15] Finally, it strongly supports the theory that lack of clear manual dominance is closely associated with specific reading disability.

This discrepancy between the results obtained by psychologists and educators on the one hand and neurologists on the other — followers of different although somewhat related disciplines — can only be explained by the assumption that identical groups have not been studied or that different methods and standards are used in the tests. Therefore, instead of disputing each others' findings and conclusions, both groups should try to define more accurately the group that they are testing and to describe more clearly just how the tests on laterality are conducted and recorded.

Eyedness

Three children had defective vision in the right eye.* Of the remainder 11 sighted with the right eye, and 4 with the left eye, and 5 were amphiocular — 2 with a preference for the right eye, and 3 for the left. Seven showed "crossed laterality" in that the eye preferred for sighting was on the opposite side from the preferred hand. One of these was right-handed and left-eyed. The others were partly ambidextrous: 3, preferring the right hand for most acts, sighted usually or entirely with the left eye, and 3, preferring the left hand, were right-eyed.

The significance of these figures on eyedness is not clear. There is certainly no such predominance of amphiocularity in these children as there is of ambidexterity, and the number with crossed laterality is apparently no greater than that in normal children.[15]

Family Histories

In hospital clinics, and presumably in schools as well, it is difficult to obtain satisfactory family histories of delay in learning to talk, speech defects, ambidexterity and reading disability. The pediatrician in private practice has a far better opportunity to obtain them because he has been in the homes and is more or less acquainted with other members of the family.

In this series of cases of specific reading disability, there was a history of left-handedness or ambidexterity or of one of the above-mentioned forms of language disability in 18 of the 21 families (85 per cent) in which the information was asked for and recorded. This high incidence and particularly the study of some of the individual family trees afforded strong evidence that the trait resulting in these conditions is inherited.

Effect on Behavior

Frustration is now recognized as one of the underlying causes of problem behavior such as showing off, lying, stealing, arson or withdrawal from the group into solitude, as well as of complaints of a more medical nature, such as enuresis, indigestion and obesity. Certainly, these children were seriously frustrated by their school failure, and it is interesting that the records of only 10 make no mention of unusual behavior or illness.

Five children were solitary and comparatively friendless, 2 were obese from simple overeating, 2 lied habitually, 2 stole habitually, 2 were known to masturbate (1 of these had sexual relations with his sister and also undressed before a mixed group of children), 1 terrified his parents by threatening to run away, 1 set the barn on fire, 2 had indefinite illnesses associated with school tests, and 1 with an I.Q. of 120, who managed to control himself at the time, has since admitted that at the age of twelve and a half he felt sure that he was a "moron." One of the obese children and 1 sex offender came from broken homes — a fact that was undoubtedly partly responsible for their behavior.

Treatment†

The diagnosis of specific reading disability means that the patient's poor schoolwork and problem behavior are due to the way he is made and to the manner in which his brain and nervous system function, not to laziness, stupidity, lack of interest, poor concentration or any physical ailment or abnormality. Quite literally, he is unable to learn reading by the way it has been presented to him but can learn, although slowly, if a different approach is used.

The basic difficulty with these children seems to be that for part of the time, but only for part of the time, they try to read from right to left. A word or a letter read correctly on one line may be read backward in whole or in part on the next line, and the resulting errors make utter nonsense.

Therefore, the basic aim in teaching reading and writing to these children is to establish firmly in their minds and fingers the correct left-to-right sequence and the shapes, names and sounds of the letters. Because their visual images are uncertain, they are helped (as most persons are in memorizing) by kinesthetic reinforcement — that is, by looking at the letter, saying it and writing it simultaneously. They are gradually taught to blend the sounds into short words and then into longer words. Eventually, as they master reading, they learn to recognize whole words just as those who were taught from the first by the whole-word method do. Even after they are reading more or less successfully, the letter drills must be continued to prevent a setback. Throughout, the emphasis is on accuracy and on understanding rather than on speed, which may or may not come later according to the interests, aptitudes and opportunities of the children. Unless there are other factors in the situation, the short attention span, the emotional blocking and the behavior problems tend to disappear as the child

*It should be noted that specific reading disability may occur in children with monocular vision.

†Detailed accounts of treatment have been presented by Orton[9] and by Gillingham and Stillman.[10]

gains confidence in his ability to learn by this method.

The actual treatment is best conducted by a skillful teacher who has enough understanding of child psychology and of the working of the nervous system to know what she is trying to do. The best results are obtained from individual tutoring for a half to one hour, five days a week, for periods of one, two or three years. The length and intensity of the tutoring depends on the intelligence of the child, the severity of his disability and his age. Younger children, other things being equal, respond far more quickly than older ones in whom years of failure have produced well justified discouragement and emotional tensions.

Practical Difficulties

Once the diagnosis has been made and the situation explained to the parents, the physician would like to hand the treatment of his patient over to the school. Unfortunately, this is seldom the best course, and then only for mild cases attending schools with good remedial teachers. Although most schools recognize reading disability and many schools have remedial reading classes, few distinguish cases of specific reading disability from their other poor readers, and fewer still are prepared to supply the intensive individual and long-continued tutoring required for the best results. The classes in remedial reading are overcrowded, and the teachers usually overworked and under constant pressure to return their pupils to the regular classes as soon as possible. The result is that pupils with a mild degree of disability — or even a moderate degree, if their intelligence is high — may learn to read after a fashion, but not well enough to do good work in the upper grades. The severer cases and patients of only average intelligence, if in public schools, are apt to end up in special classes, where they certainly do not belong, and if in private schools, to transfer from school to school in constant hope that a miracle will occur.

Therefore, it is usually necessary to advise individual tutoring by a specially trained teacher. This tutoring is best done at the school during the periods when the rest of the class are working on English so that it will not interfere with the pupil's other studies. Also, since it is not a punishment, it should never be allowed to interfere with the pupil's time off for play. Arranging for this remedial tutoring requires the consent of the school head. Although some headmasters are co-operative, others are not, perhaps through no fault of their own, and it may become necessary to transfer a pupil to some school where the tutoring can be managed.

Results

The patients varied so in their aptitudes, interests and intelligence that it was difficult to establish satisfactory standards for the degree of specific reading disability from which each one suffered and equally difficult to assess the degree of improvement shown by each as the result of treatment. In general, a child who was retarded one year in reading was classed as a mild case, one two years as a moderate case, and one three or more years as a severe case. It soon became evident, however, that a second grader one year behind in reading was much worse off than a fifth grader one year behind, and consequently the examiner's personal impression and knowledge of the patients were taken into consideration in the classification of each case as mild, moderate or severe. Even so, this grading must be regarded as relative and not absolute.

All the children eventually learned to read — even the two who had little or no real remedial tutoring. For those who are now doing satisfactory school or college work without assistance or have graduated, the result is classed as "good." For those whose disability has seriously affected their education and future livelihood, the result is classed as "poor." Those between the two extremes are classed as "improved."

Good Results

The I.Q.'s of the 16 children who had good results were normal or above, the average for the 10 children who were given psychometric tests being 113.

Remedial work by the school only. All the schools involved had good teachers of remedial reading. Six of the 8 children whom they handled successfully without outside help had mild cases. The duration of the remedial training was one to five years.

In Case 5, in which the disability was moderate, the patient had two years of remedial training and then went to boarding school, where he is doing fairly well.

In Case 9, in which the disability was severe, the patient was bright enough to conceal his disability until he was twelve, and then on a change of schools failed completely. After a year and a half of remedial training at another school with a good remedial teacher, he did well at boarding school but was able to graduate from college only by avoiding reading courses.

These 8 children would surely have made faster progress in learning to read and thereby have avoided a considerable amount of discouragement and strain had they received skilled individual tutoring as soon as their disability was apparent. Such tutoring was urged for most of them but was refused by the parents largely because the school considered it unnecessary.

Remedial work partly by the school and partly by an approved tutor. In this group were 3 mild cases, 2 moderate, and 3 severe. The patients attended schools with good remedial teachers.

The patient in Case 11, whose disability was mild, was doing poorly in a school where he had had no remedial training. He was tutored individually for one summer only and then transferred

to a school whose remedial teacher continued to work with him for three years. He is now doing well at a college preparatory school.

In Case 12, with a mild disability, the patient needed two years of remedial work by the school and two more of individual tutoring before he responded. The slow progress was largely due to the mental and emotional depression associated with his hemiplegia.

In Case 12, in which the disability was mild, the patient failed to learn to read in the early grades and became a behavior problem. He was transferred to another school and given a year of individual tutoring under supervision and another by the school's remedial-reading teacher. At the end of that year he was reading up to his grade level and had become president of his class. His parents then returned him to his original school.

The patient in Case 21, whose disability was moderate, failed to learn any reading in the first half of the first grade and became a serious behavior problem. At the age of six and a half, his parents sent him to a boarding school, where his disability was not recognized until he was tested at the end of his third year. During the next year, the school's remedial teacher worked with him without any improvement. He was then put under an approved tutor in another boarding school with great improvement, and during the next year was taught by the school's remedial teacher, by the end of which time his reading was at his grade level and his behavior much better.

In Case 23, with a moderate disability, the school worked with the patient for three years before they asked for help. She was then given a year of individual tutoring, after which there was no further difficulty.

In Case 16, in which the disability was severe, the patient improved so rapidly after a year of individual tutoring that he needed only one more year by the school. His I.Q. was probably well above the average.

The patient in Case 18, whose disability was severe, needed two years of individual tutoring and then another after the lapse of one year.

In Case 19, a severe reading disability was recognized early. The school assured the parents that the remedial reading teacher could handle him successfully. He continued to do poorly, and on a teacher's advice was fitted with aniseikonic lenses without benefit. Finally, at ten and a half years, his failure was so obvious and he was so unhappy that he was tested thoroughly and was found to have a severe disability. His arithmetic score was also low, apparently because of his general discouragement. A year of individual tutoring produced great improvement. He then moved away for several years. On his return, he was given a little more individual tutoring and is now, at the age of seventeen, doing fairly well at a small boarding school.

Improvement

One patient is still under treatment, 1 has a low I.Q., and 1 received insufficient individual tutoring in view of the severity of his disability.

Remedial work partly by the school and partly by an approved tutor. The patient in Case 22, with a moderate disability, failed to learn to read in one school and was shifted to another, where there was a good remedial-reading teacher. After four years there, her work was still so poor and she was so unhappy that she was tested for the first time. A year of individual tutoring followed by more remedial work in another and smaller school helped immensely. She is still not a good reader, but her present difficulties are due more to the discrepancy between her I.Q. and those of her associates than to her poor reading. This result is classed as "improvement" rather than "good" because the inadequate handling of her disability is partly responsible for her present unhappiness.

In Case 17, in which the disability was severe, the patient had four years of remedial work in a selected school, and then one year of individual tutoring followed by another year's work by the school. At the age of twenty-one he is in college receiving honor marks in science and passing in English, but failing in the required foreign language.

In Case 20 the disability was severe, the patient was late in talking, had a speech defect and failed to learn to read in the first grade. He is in his third year of individual tutoring, and both his reading and his speech have improved rapidly under phonetic training. This result is classed as "improvement" instead of "good" because the reading is still below grade.

Poor Results

Remedial work by the school only. In Case 1, with a moderate disability, a stuttering, partly ambidextrous, clumsy* boy had a poor start with several changes of school and several years of teaching at home. His stuttering became worse, and finally, at the age of fifteen, he was tested and found to be two years behind in reading and four in spelling. Skilled individual tutoring was advised and refused. The next winter the patient broke his right arm, and while he had to use his left, both his stuttering and his school marks improved. Nevertheless, he refused to continue left-handed writing. He later went to a tutoring school, where he failed completely, and then to a small country boarding school, where he was much happier. He was in the Army for two and a half years. At the age of twenty-three years, the patient is teaching farming at the same small boarding school and is said to stutter only under great stress.

The patient in Case 8, whose disability was moderate, had two and a half years of remedial training in the first, second and third grades before

*Apraxia is often part of the picture.

changing schools. He has continued to have trouble with reading and is now failing in a preparatory school.

Remedial work partly by the school and partly by an approved tutor. In Case 13, in which the disability was mild, the patient attended a school without good facilities for remedial reading. He has had only three months of approved individual tutoring. He has also been to a remedial-reading clinic for a few summers, but has received no consistent training through the school years. At the age of fifteen he is failing in a preparatory school. His reading comprehension is above that of his grade, but his reading speed is too slow for him to complete his assignments.

In Case 15 the disability was moderate. The patient failed to learn to read in the early grades. He then transferred to another school and received a year and a half of individual tutoring followed by another in the school's remedial-reading class. In view of his comparatively low I.Q., this was not enough. Nevertheless, instead of continuing the tutoring, his parents chose to make several successive changes of school. At the age of eighteen he is doing poorly and does not expect to try for college.

Discussion

These case histories were obtained from a carefully studied series of private patients, and what they lack in volume they more than make up in accuracy. They point out the difference between the term "reading disability," as used by most educators and psychologists,[1] and the more restricted diagnosis of specific reading disability. They make clear that the latter is a definite entity, occurring in children of all grades of intelligence, although work with those who are below the normal range is scarcely worth while. The histories confirm the opinion that patients can be discovered by means of scholastic achievement and psychometric tests, and that the diagnosis is strengthened by the finding of delayed or defective speech and ambidexterity in the child and in the family tree.

These cases also show that selected schools with good remedial teachers can obtain good results with mild cases of disability with a normal or better I.Q. (Cases 2–4, 6, 7 and 10), fair results in moderate cases with a normal I.Q. (Case 5) and even a good result in a severe case (Case 9), with a high I.Q. Ten cases illustrate the benefit of skilled individual tutoring (Cases 11, 12, 14, 16, 18, 19, 20, 21, 22 and 23), 2 the folly of frequent changes of school and methods (Cases 1 and 15), and 3 the difficulties that patients of good intelligence may have because of insufficient skilled individual tutoring (Cases 8, 13 and 17).

Summary and Conclusions

Specific reading disability is a definite entity usually associated with ambidexterity and speech defects both in the patient and in the family tree.

Ambidexterity, left-handedness and speech defects are not causes of specific reading disability. They are merely frequently associated findings and as such are to be regarded as part of the same picture.

Crossed laterality and amphiocularity seem to occur approximately as often in normal children as in children with specific reading disability. They are, therefore, probably neither causes of the disability nor frequently associated findings.

Specific reading disability may occur in children of any degree of intelligence, but intensive treatment is hardly worth while in those who are below the normal range. Unrecognized or inadequately treated, it frequently results in frustration, discouragement and problem behavior. When properly treated, patients with normal to superior intelligence are able to do well in school and college.

Mild cases can be handled successfully by some schools, although they respond more quickly and with less discouragement and problem behavior to skilled individual tutoring. Moderately severe and severe cases need intensive individual tutoring for several years. The older patients, especially, need an interested and understanding physician or psychiatrist to supervise the course of treatment and to encourage them and their parents.

Frequent changes of school or of methods of treatment are of no benefit.

Children who do not learn to read in the first grade should be studied carefully, and if they prove to have specific reading disability, they should be taught to read, write and spell by phonetic and kinesthetic methods.

General practitioners and pediatricians should know enough about the subject to make a provisional diagnosis in cases of specific reading disability that may be brought to them for school failure or problem behavior, and to advise the parents accordingly.

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GYNECOLOGY IN THE COMMUNITY*

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PHILADELPHIA

SOME years ago a colleague of mine in a western city told me that whenever he was asked to speak on the subject of "office gynecology," he refused, because he did not believe that there was such a thing. I heartily disagree with his concept, for I think that the office of the general practitioner is often — but not always — the original source of much good for the patient.

Recently, Thompson and Thompson,[1] of Camden, Arkansas, presented many points worthy of cognizance and reflection, and their paper is recommended to those who have not read it. I acknowledge that it has furnished somewhat of a background for a number of things that I shall present. The authors quote a previous author, DeBakey, as follows: "There are in the United States today some 160,000 practicing physicians, of whom only slightly more than 20,000 are certified by the various specialty boards as qualified in their chosen fields." The import of this fact is that there is approximately 1 certified specialist to 8 general practitioners. Although this does not, of course, take into account part-time specialists or specialists who have not attempted to become certified, it means that the bulk of the population is taken care of, at least primarily, by the general practitioner, whose responsibility is therefore great. He must be prepared not only to recognize the gynecologic lesion that requires the specialist's attention but also to ferret out a host of disorders in every anatomic location that may require further attention by a specialist.

I admire without stint the conscientious and hard-working general practitioner; he amazes me constantly because he knows so many things about so many different regions. Any specialist, if he is not mindful of his thinking, fails to take this into account when he considers some mistake or error in judgment by the family doctor as inexcusable. How much better would he do in a field far removed from his own ivory tower? I am thankful that I am not simply a "career man" in my specialty. I cherish not only the memory of but also the experience gained in a few early years of general practice in a small community, adjacent however to an urban medical center, for this opportunity endowed me with a valuable sense of humility.

Thompson and Thompson draw attention to the fact that apparently more and more patients consider themselves competent to select their own specialists, without consulting their family physician beforehand, and it is believed that this trend may be intensified because of the experience of war veterans and their families with the huge consultation service available in the medical departments of the armed forces — the concept is gaining ground "that only specialists are competent to treat patients."

The authors also cite Pressley's observation that "80 to 85 per cent of those seeking medical care could be skilfully and successfully cared for by a well-trained general practitioner." Although this statement may be true, it is open to contradiction far too often, as many of us know, when the physician fails to recognize his limitations. Further discussion of why this should happen is a controversial matter and has too many aspects to be covered wisely or completely in a presentation of this sort. Suffice it to say that I have merely mentioned these things as a prologue to my discussion of the part that the general practitioner in the community can take in recognizing and solving what appear to be gynecologic problems, for it is this field that I am expected to be familiar with and to offer helpful suggestions about.

Certain symptoms naturally indicate a possible pelvic complaint. Some of these should be considered serially, so that their significance and management may be fully appreciated. Generally, menstrual disturbances, pelvic pain and discomfort or annoying vaginal discharge, either alone or in combination, are mentioned primarily; too often, however, the patient soon wanders far afield, pouring out a multiplicity of complaints that may well be referable to any system in the body and are sometimes sufficient to make the diagnosis of psychoneurosis a welcome escape for the harassed listener.

MENSTRUAL DISTURBANCES AND ABNORMAL BLEEDING

These disturbances may be in the form of amenorrhea, menorrhagia or metrorrhagia. Embarrassing indeed is the failure to consider pregnancy first when amenorrhea is complained of. I have not infrequently seen unmarried women of varying age, as well as married ones, well advanced in pregnancy in spite of a regime of estrogenic therapy. The physician should therefore inquire prudently and look well before regarding amenorrhea as a functional problem. If it apparently is one, he should not be hasty with estrogenic and allied injections, especially in the young patient not far removed

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from the onset of puberty — such treatment may do more harm than good by physiologic interference with a delicately balanced pituitary-ovarian mechanism. The general physical condition may be at fault, and medication along the lines of vitamin and ferruginous therapy may well complement wholesome reassurance and advice about diet, activity and personal hygiene. In the presence of obesity, especially of relatively recent onset, desiccated thyroid is still the most dependable endocrine product, but careful observation of tolerance to the drug is imperative. It is not always essential to estimate the basal metabolic rate before the empirical effect is noted, unless easy means for its determination is at hand. Nor is it necessary to have hormonal assays immediately in functionally amenorrheic patients. Patients falling into this category need not be referred to the gynecologist or endocrinologist until a reasonable time has elapsed with employment of the measures mentioned. When there is marked or progressive alteration in secondary sex characteristics, however, it is best to seek specialized advice, for the rare possibility of a masculinizing tumor of the ovary or a similar neoplasm of the pituitary or adrenal gland must be borne in mind.

It is well to remember that amenorrhea is only one symptom of the menopause. I cannot caution too strongly against the indiscriminate way in which estrogenic therapy is prescribed for any and all symptoms that patients may exhibit or let themselves think they must develop, when regular menstruation ceases sometimes after forty or forty-five years of age. A legend has grown up that vasomotor and nervous symptoms must develop at this time. Many a woman without such symptoms may anxiously seek endocrine therapy or even have it suggested for her, not only by friends but also by physicians themselves. Frequently, explanations and reassurance, with and without mild sedation, suffice in the management of these unpleasant vasomotor symptoms. I am inclined to believe that estrogenic therapy, employed regularly and over a long period, actually prolongs menopausal phenomena in certain cases, and we are all more or less familiar with the confusing picture produced during the postmenopausal period when so-called "withdrawal bleeding" occurs in the course of prolonged hormonal medication.

Bleeding, either menorrhagia or metrorrhagia, or both, causes most physicians a good deal of concern both in diagnosis and in management. The first point is to determine the source of the bleeding, and the next to decide whether it is organic or functional. This is sometimes difficult to do exactly, for the possibilities may overlap, owing to existing lesions combined with functional disturbance. For this reason, a careful history is essential, and the patient's decade of life is of extreme importance because of the relative frequency of causative factors likely to appear in certain age groups.

In abnormal bleeding from the genital tract in the child or the young girl approaching puberty, local causes of an organic nature, either benign or malignant, are rare, whereas constitutional or endocrine disturbances, or both, are much likelier to be at fault. Such disturbances cannot be assumed, however, until a careful pelvic examination is made in addition to a general physical survey. If a hemoglobin estimation is particularly low, a complete blood count, with bleeding and clotting times, should be taken, not only to determine any degree of anemia but also to exclude a blood dyscrasia. Tuberculosis or heart disease may be a factor, or dietetic inadequacy may be associated with metabolic disturbance and vitamin deficiency. One should not hesitate to make a pelvic survey, having excluded the general factors mentioned, before deciding on an endocrine imbalance. This can be accomplished under suitable conditions with understanding and gentleness. External viewing of the genitalia and rectal examination may be supplemented by direct inspection of the vagina through a Kelly cystoscope with reflected light or by the use of an electrically lighted instrument. Thus, a foreign body can readily be eliminated, and any peculiar lesion that might indicate a neoplasm can usually be seen if present. Bimanual rectal examination may reveal an ovarian tumor. If so, a rare feminizing tumor may be involved, although the absence of an ovarian enlargement may merely mean precocity, as Novak[2] has carefully pointed out. In any event, the finding of an organic pelvic lesion means that the young patient should then be referred to the specialist.

An endocrinopathy is probably the most frequent and probable cause of these disturbances. Immediate recourse to hormonal injections should be avoided. Often, these endocrine disturbances, like amenorrhea, are self-limited and respond to reassurance and general measures. Thyroid may be tried to advantage, and if it is not satisfactory, estrogen and progesterone therapy may be instituted. Testosterone may be effective as a stopgap in the control of abnormal bleeding, but the dosage must be guarded, since the masculinizing effects of testosterone are well known. Gonadotropic hormones have been largely discarded by thoughtful endocrinologists. All in all, hormonal therapy should not be used indefinitely, for it cannot be determined with certainty what future maladjustment may result from the interference with the natural delicate endocrine balance. I have seen little good result from snake venom or styptics. If no improvement results after a reasonable trial of carefully managed endocrine therapy, the problem should be put up to the specialist, with curettage, hormonal assays and complete metabolic studies. Curettage is sometimes not only diagnostic — to

prove hyperplasia of the endometrium — but also curative for a long time, and repetition may be necessary. Even blood transfusion may have to be resorted to. Most physicians avoid irradiation in these young patients, and major pelvic surgery for functional disturbance of this nature is rarely if ever necessary. It is a wise practitioner who recognizes relatively early when he is getting nowhere with office therapy.

During the reproductive period, one is much likelier to find organic than functional causes for abnormal bleeding. First to be thought of are the abnormalities associated with pregnancy — threatened or incomplete abortion, premature separation of the placenta, or placenta previa, and ectopic pregnancy. The general practitioner doing obstetrics knows from his own experience when to seek help and is limited only by his ability to obtain such help in any of the conditions mentioned. The patient who continues to bleed from an incomplete abortion and, naturally, one suspected of harboring an ectopic gestation require reference to the specialist. In such a case it is clear thinking to consider every threatened or incomplete abortion as a possible extrauterine pregnancy.

Unhealed lacerations with eversion, erosion, polyps and subinvolution may be responsible for abnormal bleeding, and office treatment may be of great benefit. Local applications to the cervix and the use of tampons, carried out indefinitely, require time and are of no permanent value, except perhaps to the income of the practitioner. Well considered cauterization, on the other hand, is beneficial. Subinvolution, if accompanied with retrodisplacement, is often benefited by prolonged hot saline douches, the use of the knee-chest position and the judicious use of the pessary, with appropriate care in its employment. Polyps, if superficial, may be excised, and the base cauterized. The removed polyp should always be sent to a pathologist for study. I believe that the mere finding of a polyp calls for diagnostic curettage to exclude others in the uterine cavity or endometrial disease of another nature that may be a more probable cause of the bleeding; this should be a hospital procedure.

During this period one may also discover fibromyomas of the uterus and true ovarian tumors. The necessity of distinguishing between the malignant tumors and the non-neoplastic or so-called "retention cysts" of the ovary is discussed below. Naturally, lesions of the nature mentioned, if found or suspected, should be referred to the specialist for decision. The predominant thought, however, when abnormal bleeding is complained of in the reproductive period, should be of the possible existence of cervical carcinoma, and the need for early diagnosis and prompt treatment is obvious. Although the Papanicolaou vaginal-smear test may be indicative of cancer, a thorough cervical biopsy and an adequate study of the tissue by a competent pathologist must be relied on to give the final answer.

Abnormal bleeding in the menopausal and postmenopausal patient may be caused by senile vaginitis, and the use of an astringent douche primarily, followed by a lactic acid douche to maintain the normal acidity of the vagina, may be all that is necessary. Estrogenic suppositories may help, but I am averse to prolonged estrogenic therapy, either by mouth or by injection, because the factor of "withdrawal bleeding" may have to be reckoned with sooner or later. Decubitus ulceration is sometimes seen in the prolapsed uterus and also occurs with irritation due to a neglected pessary. Local treatment only helps to prepare the patient for the surgical procedure that may be necessary to cure the prolapse. Nonimprovement demands biopsy, if one is to be on the safe side.

The danger signals that menopausal and postmenopausal bleeding present should be re-emphasized. The physician should not procrastinate, when such bleeding is present, even though no pelvic abnormality can be seen or felt. No local or general treatment is indicated for bleeding from the inside of the uterus. Only curettage in the hands of one qualified to carry the problem through to its final conclusion is the answer to this problem, and here again it is the pathologist who must give the final answer after careful study of the tissue. Hormonal therapy for the treatment of this symptom is not only injudicious but actually dangerous. Macfarlane[3] recently reported 18 cases of postmenopausal bleeding due to estrogenic therapy, with an unnecessary hysterectomy resulting in one. The physician should pass the responsibility to the gynecologist.

Pelvic Pain and Discomfort

Pelvic pain and discomfort are generally associated with pelvic lesions, which may also cause referred symptoms that bring the patient to the doctor. An important thing to remember is that the presence of a pelvic abnormality, per se, does not necessarily explain the symptomatology, nor does a pelvic lesion invariably cause pain. An example is afforded by the problem of retrodisplacements of the uterus. How often is this malposition blamed as the cause of backache, and treatment instituted or operation advised, when the true cause may be found in an orthopedic or other extrapelvic lesion! Acquired retrodisplacements may cause backache, but manual replacement and the use of a properly chosen pessary constitute a therapeutic test that should never be neglected before surgery is advised. Too often, surgery is recommended for congenital retrodisplacement. I do not believe that this condition is ever the sole cause of pain or discomfort, unless it is complicated by pelvic inflammatory disease or endometriosis.

Renal lesions may simulate a variety of tubo-ovarian disease or appendicitis as well. The necessity of evaluating urinary findings only if the specimen obtained is a catherized one is emphasized. Reported pus or blood in the urine may well come from a contaminating vaginal discharge should a voided specimen be relied on.

It is unfortunate that uterine carcinoma seldom causes pain until the lesion is well advanced. Vulval or primary vaginal cancer may cause pain, however, when the lesion is beginning and small in extent. Therefore, to exclude cancer, any genital sore that does not heal readily should be viewed with suspicion and biopsied promptly, as well as being studied for a venereal cause. Perhaps it is better to refer such cases promptly to a specialist.

Fibromyomas frequently cause pain and distress, and when such symptoms are investigated pelvically, either with or without bleeding symptoms, reference to the specialist for appropriate treatment is desirable. Symptomless myomas, on the other hand, may be observed at regular intervals to note their progress or regression, but the patient should always be told of their presence. This is a double protection.

Pelvic inflammatory disease of gonorrheal, postpartum or postabortal origin is usually easy to recognize, for pain is the predominant symptom. Today's treatment, with chemotherapy and particularly with penicillin, is a valuable adjunct to the conservative management that has been in vogue for so long. After subsidence of the acute symptomatology, prolonged hot saline douches and diathermy do much to help Nature in restoring the pelvic organs to normal. Rarely is surgery necessary, except in the presence of a pelvic abscess, when drainage of the cul-de-sac is indicated or when repeated attacks have occurred from time to time. Tuberculous pelvic inflammatory disease is suspected when fever and symptoms do not subside in a reasonably short time, particularly when there is an antecedent history of tuberculosis or suggestive chest findings. Pelvic endometriosis may simulate pelvic inflammatory disease, but the etiology of the latter is lacking in the history. Endometriosis presents a difficult problem in treatment. Testosterone treatment may perhaps be beneficial, if the diagnosis is an accurate one. This is not always possible, however; it must often be a presumptive diagnosis, and it is better to let the specialist decide whether or not surgery is the answer.

Ovarian enlargements are a frequent cause of pelvic pain. The responsibility of advising surgery in these cases is grave, for the primary decision is a differentiation of non-neoplastic cysts, better known as retention cysts or graafian follicle and corpus luteum cysts, and true ovarian neoplasms. Repeated examinations will help to determine this, for neoplastic growths of the ovary continue to enlarge, whereas retention cysts, being functional, tend to alter or regress. Far too many ovaries are sacrificed by injudicious advice and by even more injudicious surgery. On the other hand, a progressively enlarging tumor demands reference to the specialist, because it may represent any variety of ovarian neoplasm, either benign or malignant. Sizable tumors, when primarily found or when torsion of the pedicle is suspected, need prompt surgical treatment.

Finally, dysmenorrhea may be an accompanying symptom of any of the organic pelvic lesions mentioned above, but the most frequent, perhaps, is the type known as essential dysmenorrhea, which is present without demonstrable organic change, unless an acutely anteflexed uterus is regarded as an organic abnormality. Although such anteflexion may play a part mechanically, it is more probable that constitutional or endocrine influences, or both, and neuropsychiatric factors are to blame. I have nothing new to offer in the office control of these patients. Broad principles of management must be relied on. Reassurance and the prolonged psychosomatic approach are often necessary in addition to the correction of physical, hygienic, nutritional and environmental obstacles. Every hormonal and other remedy in the books has been tried, with testimony for and against each, by equally enthusiastic and reputable investigators — so that one can "pay your money and take your choice." Accompanying symptoms — headache, gastrointestinal disturbances and vasomotor and nervous symptoms — add to the difficulty of specific medication. Pregnancy usually relieves the trouble, but unfortunately the problem of sterility enters into the picture in some of these married patients. Antispasmodic remedies reinforced with barbiturates and codeine help the majority; the most obstinate cases should have a dilatation and curettage, or even a stem pessary. Sympathectomy is losing its popularity. I strongly believe that in the most stubborn cases, an organic lesion, particularly endometriosis, has been overlooked primarily and must be corrected.

Abnormal Vaginal Discharge

A certain amount of vaginal secretion is normal and readily explained on a physiologic basis — that is, normal glandular activity in the Bartholinian and cervical glands, with a reaction in the neighborhood of pH5 or less. It is supposed that the correlation of enzymatic activity and the presence of a normal flora in the vagina, governed by the bacillus of Döderlein, maintains normalcy. This delicate balance is readily destroyed by bacteriologic infection of varying degree.

Abnormal vaginal discharge can result from a multiplicity of causes. The most frequent is eversion of the cervical mucosa due to lacerations and accompanied by hypersecretion and low-grade infection, which may result in erosion and may be accompanied by hypertrophy and cystic degenera-

tion — the entire process being covered by the overall diagnosis of cervicitis or endocervicitis. Occasionally, one sees congenital eversion or erosion, or both, in the virgin, the result of a developmental error — based on failure of the hypertrophied cervical mucosa, stimulated in utero by the mother's estrogens, to regress at birth.

Next in frequency is the discharge due to gonococcal infection, which involves Skene's tubules, Bartholin's glands and most frequently and persistently the glands of the cervical canal. Secondary irritation of the vagina and vulva then follows, and a profuse and offensive discharge results.

Often seen and readily recognized in a wet smear is a *Trichomonas vaginalis* infection, which is often due to the prolonged activity of this flagellate in an unhealthful environment, as noted above. The primary source of this organism is still a moot question, but its presence is associated with a most annoying and irritating discharge. Yeast fungi, principally of the Monilia group, act in a similar fashion.

Discharges, of varying degrees and amount, of course, accompany serious lesions, principally carcinoma of the external genitalia and uterus due to secondary infection of necrotic tissue. Pyometra, caused by cervical-canal stenosis, cancer or degenerating myomas, also falls into this group. Pruritus based on metabolic disorders, such as diabetes, and giving rise to local irritation and itching may also be accompanied by discharge. The breakdown of venereal and granulomatous lesions or of tuberculous ones has a similar effect.

The principal responsibility of the general practitioner is to try to recognize the cause. In the group mentioned above it is obvious that reference to the specialist is desirable in most cases, especially when a possible neoplasm exists.

In the treatment of a discharge associated with acquired eversion of the cervical canal, douches and local applications require time and are usually inadequate. The nasal-tip cautery, however, may be employed as an office procedure, provided there is no acute infection as evidenced by a history of possible gonorrheal infection, the presence of fever and the existence of pelvic inflammatory disease, as determined by bimanual examination. In cases in which marked hypertrophy and extensive cystic degeneration are present, however, endothermic resection or a plastic operation — both of which are essentially hospital procedures — had better be employed.

Of especial benefit is the light cauterization of the congenital type of eversion, which can be accomplished in the virginal girl by exposure of the cervix with a small speculum or Kelly cystoscope but is frequently impossible because of the young patient's natural sensitivity, and it is necessary to carry out the treatment under anesthesia as a hospital task. In all cases of cervical cauterization subsequent dilatation of the cervical canal is desirable at indicated intervals to lessen the incidence of atresia or stenosis; a sterile uterine dressing forceps can be used effectively. Lactic acid douches may be advised after complete healing has taken place.

When *T. vaginalis* infections are discovered, it is perhaps better to clear up any abnormalities that exist to ensure less likelihood of recurrence, although it is quite permissible to attack the infestation primarily to promote symptomatic relief. The remedies employed are legion; the important thing to remember is to attempt to restore the normal flora of the vagina as quickly as possible. I prefer the use of silver picrate, by insufflation and suppository, first to destroy the trichomonads, the reaction being maintained thereafter by the regular use of lactic acid douches (a teaspoonful to 2 quarts of warm water). In persistent cases infection of the urinary tract and a partner harboring the organism in the prostate gland should be sought. Monilia infestations are handled in almost similar fashion, with a keen lookout for an excess of sugar in the blood or urine, or both.

Discharge due to gonorrheal infection may be due to the initial attack, to recurrence or to chronic infection of Skene's tubules, Bartholin's glands or the cervical glands. Smears and cultures are helpful, but may not give positive results. In any event, if the history and clinical findings are sufficient to warrant a presumptive diagnosis, local measures should be avoided in the acute and subacute stages, chemotherapy and penicillin being depended on. Later, chronic infection may be eradicated with the cautery or endotherm, Skene's tubules and the Bartholinian glands being also regarded as foci. If gonorrheal infection has ascended beyond the cervix, as indicated by evidence of pelvic inflammatory disease on bimanual examination, one should by all means go slowly in prescribing local treatment. In such cases chemotherapy and penicillin are of little help, and the physician must wait for further subsidence of the inflammatory process before resorting to anything else. Later, cleansing douches, particularly prolonged hot saline douches, will be found most helpful in restoring the pelvis to normal or in alleviating pain and menstrual disturbance. The question of subsequent surgery, because of organic or functional disability or because of repeated attacks, is for the specialist to decide.

Infertility

Finally, regarding the problem of the barren marriage, I must speak cautiously, for I am within the very citadel of research and wisdom that pertains to infertility. Fortunate is the practitioner of New England, who can send his problems to Boston!

The couple who seek advice should be persuaded that any studies must be on a partnership basis. The husband should first be excluded as the partner at fault, or whose fertility is lessened. Only if no

organic disease can be detected in the woman's pelvis is a tubal insufflation test indicated; the examiner should beware of telling the woman that she has a "tipped womb" and can never conceive, for his face may be red nine or ten months later. Proceptive advice, especially concerning the ovulatory period, may be given and practiced even before tubal insufflation. The physician should depend on desiccated thyroid before resorting to a galaxy of hormonal injections, and should not overlook constitutional defects in either partner. If after a reasonable trial of sane advice and simple measures along these lines, he believes that he has failed, he should seek counsel of the specialist — who may do no better.

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Q FEVER*

Report of a Case

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THE speed of modern travel and the relatively long incubation period of many infectious diseases have made it necessary for the physician to have some acquaintance with global epidemiology, to cope with some of his diagnostic problems. In the case reported below a diagnosis of Q fever was established serologically in a patient with clinical findings of primary atypical pneumonia. The diagnosis was suspected from the fact that the patient had been in an area where the causative agent of the disease occurs and had returned from that area within the known incubation period of the disease.

I. M., a 56-year-old merchant, became ill on March 3, 1947, while on a transatlantic steamer returning to the United States from a 3-month business trip in Europe. The illness began suddenly with chills, generalized aching, anorexia, malaise, dizziness and slight diarrhea. There was also a slight cough without pain. The patient was seen on the same day by the ship's physician,§ who found the temperature to be 103.8°F., the pulse 116, and the respirations 36. Examination revealed no abnormal findings except "slight respiratory roughness on auscultation." Urinalysis then showed a slight amount of albumin. The temperature on the following day dropped to 99.8°F., but on March 5 was again found to be 103.4, with a pulse of 110 and a respiratory rate of 40. Meanwhile, the patient continued to cough, and he raised small amounts of blood-flecked sputum. He was given fluids liberally, some "pills" (probably aspirin) and two injections of penicillin-in-oil during these 2 days, without benefit. He felt comfortable except that he perspired profusely, especially after taking the pills. The ship docked in New York on March 5, and the patient came directly to Boston by plane and was admitted to the Beth Israel Hospital on the following day. He had no pleural pain or headache and had not noted any blood in the stools.

The patient had had diphtheria at the age of 10 but gave no other history of infectious diseases. He was known to have had slight hypertension for a number of years. He had also had frequent colds but none that were severe. For the past several years he had noted occasional substernal pressure on exertion that was relieved by belching.

Physical examination revealed a well developed and somewhat obese patient. He was well oriented but appeared acutely ill and feverish, perspiring profusely, breathing rapidly, coughing frequently and raising small amounts of tenacious blood-streaked and rusty sputum. Examination of the chest revealed limited expansion of the right side. Over the lower half of the right portion of the chest posteriorly there was moderate dullness with numerous medium crepitant rales at the end of inspiration and after coughing, some coarse rhonchi on expiration and diminished tactile fremitus, spoken voice and breath sounds. The left lung was normal. There were no skin lesions, the spleen was not felt, and the rest of the physical examination revealed no abnormalities.

The temperature was 104°F., the pulse 108, the respirations 38, and the blood pressure 138/86.

The patient was given 50,000 units of crystalline penicillin G in aqueous solution intramuscularly every 3 hours until March 13. He also received 8 cc. of elixir of terpin hydrate with codeine every 4 hours for 3 days, after which the drug was discontinued because of nausea and epigastric distress. No other medication was given. The temperature chart is presented in Figure 1. The patient continued to sweat profusely until the temperature reached normal. The cough continued throughout the febrile period and then abated. The sputum was blood tinged until March 9; thereafter it was mucopurulent and scant and no sputum was raised after March 11. The patient appeared to be quite comfortable and cheerful throughout most of his hospital stay except for some restlessness at night during the height of the fever. His appetite remained poor during the febrile period but began to improve after March 9. Epigastric distress was present from the time of admission until March 11. After the temperature reached normal, the patient began to improve rapidly although the physical signs in the lungs remained essentially unchanged until discharge from the hospital on March 19.

X-ray examination of the chest on March 6 revealed findings that were consistent with a segmental pneumonia in the anterior and lower portions of the right lower lobe with an associated atelectatic component. The configuration of the heart and aorta suggested hypertensive heart disease. On March 8 the consolidation of the right lower lung was somewhat smaller in extent. Films taken 3 days later showed a further decrease in the extent of consolidation at the right base and no new abnormalities. The roentgenograms and

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§We are indebted to Dr. J. B. Maguire, medical officer of the *Queen Elizabeth*, for an abstract of his record of this case.

fluoroscopic findings on March 17 also indicated a further decrease in the extent of the segmental consolidation in the right lower lobe. There was definite evidence of retraction of the interlobar fissure, suggesting a persistent atelectatic component in the pneumonic consolidation at that time. Re-examination on May 12 showed almost complete re-aeration of the right lower lobe, with only a small triangular area of consolidation adjacent to the anterior interlobar fissure. The lung fields were otherwise clear. Both leaves of the diaphragm were in normal position and showed normal excursion by fluoroscopy. The anteroposterior and lateral views of the chest on March 6 and on May 12 are presented in Figure 2.

Urinalysis on admission showed a ++ test for albumin and a rare white blood cell in the sediment but 2 days later was negative. Examination of the blood revealed a red-cell count of 4,610,000, with a hemoglobin of 13.0 gm. per 100 cc., and a white-cell count of 11,500, with 72 per cent neutrophils, 22 per cent lymphocytes, 5 per cent monocytes and

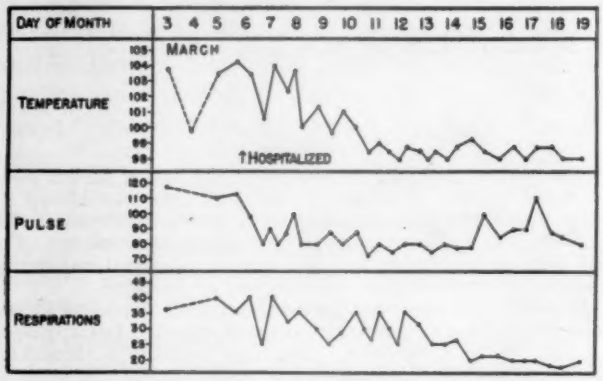

FIGURE 1. *Clinical Chart.*

1 per cent eosinophils. On the following day the white-cell count was 11,600, with 84 per cent neutrophils, 10 per cent lymphocytes and 6 per cent monocytes. A few of the neutrophils showed toxic granules. The sputum showed gram-positive cocci in pairs and chains and no acid-fast bacilli in the stained smears, and cultures showed a predominance of alpha-hemolytic streptococci. Blood cultures taken on admission were negative. Cultures of the stools on March 9 and 10 yielded no pathogenic organisms. The serums on March 7 and 19 were negative for typhoid and paratyphoid agglutinins. Tests for cold agglutinins and for antibodies against influenza A and B viruses (Hirst test) on serums obtained on March 11 and 19 and April 30 were negative. An electrocardiogram taken on March 13 was suggestive of an old anterior myocardial infarct, but no changes of significance were noted in later electrocardiograms.

Complement-fixation tests for Q fever were carried out with the patient's serum by Dr. Herald R. Cox, of the Section of Viral and Rickettsial Research of the Lederle Laboratories. The strain used in these determinations was the original American strain isolated from *Dermacentor andersoni* at the Hamilton, Montana, laboratory of the United States Public Health Service and was originally called the "Nine-Mile Strain."[1] The results were reported as follows: March 11, ++++ in a dilution of 1:16; March 19, ++++ in a dilution of 1:128; and April 30, ++++ in a dilution of 1:256 and ++ in a dilution of 1:512. These results indicate that the patient undoubtedly had Q fever.

The essential features of this case were: the sudden onset with chilly sensations, anorexia, cough and mild diarrhea; the temperature of 102 to 104°F. with a relatively slow pulse for six days; gradual defervescence between the sixth and ninth days; marked sweating throughout the febrile period, increased at first by antipyretics; marked to moderate cough productive of small amounts of blood-streaked and rusty sputum throughout the febrile period; an increased respiratory rate without dyspnea; moderate to mild illness with only occasional periods of restlessness during the height of the fever; physical and roentgenographic evidence of atypical pneumonia and segmental atelectasis limited to the right lower lobe with residual x-ray findings in that area after more than two months; absence of pleural pain, rash or palpable spleen; slight neutrophilic leukocytosis; negative cultures for pathogenic organisms in the blood, sputum and stools; negative serologic findings for enteric agglutinins, cold agglutinins and for the viruses of influenza A and B; and, finally, a significant and progressive increase in the titer of complement-fixing antibodies for the rickettsia of Q fever after the middle of the second week of the disease, the titer remaining elevated after the eighth week.

Rickettsia burneti,[2] the causative agent of Q fever, has been recovered under natural conditions, either in infected ticks or from human cases, in Australia,[3] in several western states in this country from Texas to Washington,[4] in Italy,[5] in the Balkans[6] and in Panama.[7] An outbreak among troops in Camp Patrick Henry, Virginia, originated in Italy.[8] In Australia, Q fever is essentially an occupational disease affecting chiefly slaughterhouse workers, dairy hands and foresters.[3] The recent outbreak in Amarillo, Texas, involved stockyard and packing-house workers.[9] Several outbreaks have been described among personnel in laboratories where work with the agent was carried out,[10–14] and at times affected persons who had not had direct contact with the agent. Infection in most cases is presumed to be by inhalation of infected materials. There was a history of a tick bite in some American cases that occurred in areas where the rickettsia of Q fever has been found.[4] The exact mode of transmission of the disease to human beings, however, is not known.

Pulmonary lesions have not been recognized as a prominent feature of Australian Q fever. The signs and x-ray findings of atypical pneumonia were first described in the outbreak at the National Institute of Health.[10] They were an important feature of the first authenticated case that was naturally acquired in this country[15] and in the various groups of cases studied by the Army units,[7, 11, 12, 16, 17] as well as in the Amarillo outbreak.[18]

The findings shortly after admission in the case reported above were those of a primary atypical pneumonia. A brief survey of the itinerary of the patient indicated that he had been in Italy in the vicinity of Naples for two or three weeks before the onset of symptoms. The possibility of Q fever was therefore immediately suspected on the basis of the reports of the occurrence of that disease in

association with atypical pneumonia in this region and in other parts of Italy. Suspicion was further increased when inquiry revealed that the patient had spent about ten days in the vicinity of Naples inspecting United States Army stocks that were stored in supply depots in that vicinity. Although he was not aware that any of the buildings that he visited had been used for housing livestock, such a possibility could not be excluded. Most of the military cases reported from that area occurred

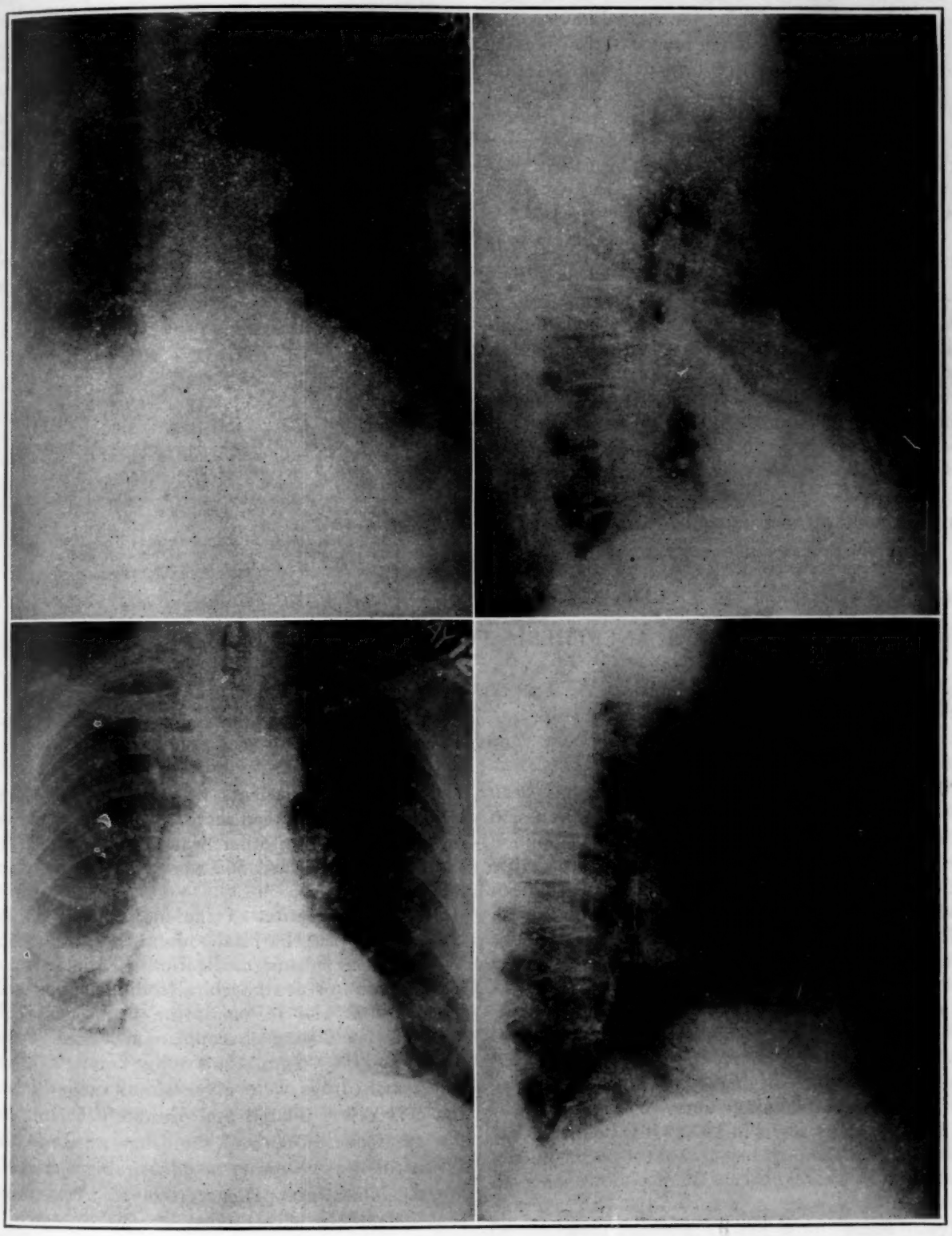

FIGURE 2. *X-ray Films of the Chest on March 6 (above) and on May 12 (below).*

among personnel who had been billeted or had spent some time in buildings or lofts that had been used for livestock or for stock feed.[5] The patient was not aware of any exposure to animals, birds or insects, nor did he remember having any insect bites. A more thorough review of the itinerary made after he was fully recovered indicated that he had been in the vicinity of Naples between thirteen and twenty-three days from the time of the first symptoms. The mean incubation period of the cases reported by Robbins and his co-workers[5] from the same area was nineteen to twenty days, with a possible range of fourteen to twenty-six days. It therefore appears likely that the illness was acquired in the vicinity of Naples.

Summary

A case of Q fever occurring in Boston but originating in the vicinity of Naples, Italy, is reported. The clinical features were those of a nonbacterial pneumonia. The diagnosis was suspected on epidemiologic grounds and established by the demonstration of a rise in antibodies for *Rickettsia burneti* in the serum during convalescence.

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SPINAL ANESTHESIA FOR PELVIC DELIVERY*

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THE relief of pain during childbirth has been since time immemorial a subject of discussion and controversy. At first the differences of opinion were based on biblical interpretations. Snow's use of chloroform, however, for the delivery of Queen Victoria of England in 1853 sounded the death knell for the opponents of obstetric anesthesia. The recent work of Lull and Hingson[1] has again focused attention on this subject, which is now a lay as well as a professional topic of discussion.

This series of 595 cases delivered under spinal anesthesia out of 1000 consecutive cases is presented without any claim to originality or radical departure from established technics, since this method was first introduced by Kreis in 1900. It is believed that the study may serve to bring about a better understanding and a clearer conception of a known method.

Presentations were in conformity with average figures. There were breech presentations in 40 cases, the remainder being of the cephalic type. Delivery in 310 patients was spontaneous, 11 patients required cesarean section, and forceps delivery of one type or another was resorted to in 679 patients. Of the last, 562 were of the prophylactic low-forceps type.

The premedication of the majority of patients consisted of pentobarbital sodium and scopolamine. This was the only premedication used in 801 cases. The amount of pentobarbital sodium given varied between 0.2 and 0.5 gm., the usual dose being 0.3 gm. The dosage of scopolamine varied between 0.0003 and 0.0006 gm., the average being 0.0004 gm. These two drugs were given simultaneously when the cervix was dilated approximately 3 cm. In a few cases one or both of the drugs were repeated. When this was necessary no undesirable results were noted. Ninety-six patients received various combinations of the barbiturates, scopolamine and narcotics such as morphine and Pantopon. The remaining 103 patients received no premedication either because labor was too rapid to allow for adequate preparation or because the patient entered the hospital just prior to delivery.

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As soon as the cervix is fully dilated and the patient is ready for actual delivery, she is turned on her side and held firmly by an attendant. The skin of the back is prepared with any routine antiseptic solution and 50 mg. of ephedrine sulfate with 1 cc. of 1 per cent procaine is injected locally at the contemplated site of lumbar puncture, either the third or the fourth lumbar interspace being employed. The patient is then allowed to have a pain, and as soon as this has passed the spinal needle is introduced into the subarachnoid space. A syringe has previously been loaded with 50 mg. of procaine in 1 cc. of physiologic saline solution. As soon as puncture is successful the anesthetic solution is injected, the needle removed, and the patient placed in position for delivery. Actual puncture and introduction of the anesthetic solution can be accomplished between two pains, and if the drug has been deposited properly within the subarachnoid space the patient will rarely have more than one pain after the injection. Blood-pressure and pulse recordings are taken, oxygen is at hand for nausea, vomiting or any other emergency, and the patient is ready for delivery. Occasionally, the technic has been slightly modified to provide a so-called "saddle spinal anesthesia" by elevation of the head approximately 10 cm. This will produce anesthesia limited almost exclusively to the lower birth canal, the perineum and the perianal region.

This technic can also be somewhat altered by injection of the ephedrine into the deltoid muscle to hasten absorption and by the use of procaine that is marketed in ampules in 10 per cent solution. A 5 per cent solution, however, is preferred for spinal injection. Procaine injected locally at the site of puncture can be omitted if the patient is adequately premedicated. Larger doses of the spinal agent can be utilized, but it is believed that attempts to obtain longer anesthesia greatly increase the risk and are responsible for the majority of the reported fatalities with this method.

Aside from a few strong proponents of spinal anesthesia in obstetrics, such as Cosgrove[2] and Wiggin,[3] this method does not enjoy the place it rightfully deserves. Lull and Hingson[1] mention it as being of value but do not strongly advocate it. Others, especially the leaders in the field of obstetrics, vigorously condemn it. The technic has much to recommend it, and a discussion of its positive values is definitely indicated.

In this series, 595 patients received spinal anesthesia for pelvic delivery. In 4 patients, or 0.65 per cent, spinal anesthesia was insufficient for delivery, and local anesthesia of the perineum was employed as a supplement. In 1 patient an internal podalic version became necessary after the administration of spinal anesthesia, and ether was required to produce the desired relaxation of the uterus.

There was no fetal mortality that could be attributed to spinal anesthesia. Five infants of the total group had delayed respirations, and only 1 of these occurred following the use of spinal anesthesia. The "sleepy babies" delivered under spinal anesthesia were considered to be a result of premedication, but the delay was not sufficiently severe to suggest that premedication is unsafe.

There were no maternal deaths. A superficial saphenous thrombophlebitis occurred in 2 patients, and conservative therapy was sufficient to alleviate this condition. The incidence of true postspinal headache was about 1 per cent. No cases of atelectasis were detected, although we were ever on the alert for this complication. There were no major post-partum pulmonary complications such as those reported with the use of inhalation anesthesia, when there is frequent vomiting and aspiration of gastric contents. This is by far the greatest hazard of general anesthesia and is further increased in obstetrics.

Hartzell and Mininger[4] reported 20 cases of bronchopneumonia following the use of ether in obstetrics and attribute this high incidence to medication with suppression of cough reflex, prolonged gastric emptying time during labor and fluidity of gastric contents. These factors, as well as the emergency nature of obstetrics, are responsible for the relatively high mortality and morbidity accompanying the use of general anesthesia for delivery. Aspiration of gastric contents and gastric lavage should be practiced routinely to furnish the patient with every possible safeguard if general anesthesia is to be employed to a depth abolishing the cough reflex. Hall[5] discusses 5 fatal cases among 15 cases of aspiration pneumonitis following inhalation anesthesia for delivery. Meurlin[6] reported 7 fatal cases in four years caused by aspiration of stomach contents. Mousel, Stubbs and Kreiselman[7] reported 47 fatal cases occurring under anesthesia in Washington, D. C. in two years; 5 of these were in obstetric patients, 4 of whom died after aspiration of vomitus — 3 under ether and 1 under ethylene — and 1 from convulsions following nitrous oxide and ether anesthesia. Norton[8] made a mortality study of 187 deaths in 66,376 live births and reported 8 cases in which anesthesia was the cause of death. Two patients had received drop ether; 1 of these died of aspiration of vomitus, and the other after sixty-five minutes of ether anesthesia. In another case nitrous oxide, oxygen and ether had been used along with chloroform. Five deaths occurred under spinal anesthesia. One patient received 100 mg. of procaine and 10 mg. of pontocaine, and the other 4 were given 100 mg. of procaine; delivery in 1 of these cases was an agonal cesarean section. Norton states that the patient who died of aspiration of vomitus could not have been saved because it is necessary to anesthetize patients with full stomachs. This is considered the

crucial value of spinal anesthesia — the status of the gastric contents is not of vital importance if spinal anesthesia is employed. It is also strongly believed, as mentioned above, that the risk is markedly increased as the dosage is increased and that the reported deaths under spinal anesthesia were a result of excessive dosage.

There were no permanent neurologic sequelae. This feared complication must be recognized as a potential hazard but should not be distorted out of all proportion. Shimberg[9] investigated 14,073 patients receiving spinal anesthesia at a Veterans Administration hospital and reported 2 cases of nonspecific meningitis and 3 cases of peripheral neuritis. These were transient, with no permanent paralysis or loss of sensation. Stein and Tovell[10] state that in a series of over 10,000 patients receiving spinal anesthesia at the Mayo Clinic no permanent motor paralysis has been encountered. The risk is present, but the incidence of this complication does not justify the exclusion of a valuable method of anesthesia.

There can be little doubt that any method of regional anesthesia has the least harmful effect on the fetus. Effects on fetal respirations are a result of one or more of the following factors:

Premedication. The use of regional anesthesia has conclusively proved that sensible, conservative premedication with the barbiturates and scopolamine has no deleterious effect on the fetal respirations. Morphine sulfate has been employed in a small number of cases when deemed advisable, and even this dreaded obstetric narcotic has exerted little if any influence on the fetal respiration when spinal anesthesia was used.

Anesthetic drug. The volatile liquid inhalation agents, such as ether, chloroform and vinethene, and the gases, such as cyclopropane, ethylene and nitrous oxide, are capable of exerting their effects on the fetus. Pentothal Sodium also enters the fetal circulation and can narcotize the fetus, but 50 mg. of procaine deposited in the spinal canal has thus far demonstrated no effect on fetal respirations.

Hypoxia. No inhalation agent permits the use of 100 per cent oxygen in the inspired mixture at all times. Nitrous oxide and oxygen is notoriously prone to produce hypoxia, and this is in fact necessary to a certain extent to produce anesthesia of the third plane. The other inhalation agents vary only in the extent of oxygen deprivation. This hypoxia is transmitted to the fetal brain. It is pertinent to make special mention of cyclopropane, whose proponents have always stressed the high concentration of oxygen that can be permitted with this drug. It is well to caution that the amount of oxygen flowing into a closed system does not indicate the blood saturation with oxygen. Cyclopropane, with its lack of respiratory stimulatory effect, does not ensure against hypoxia even though the mixture contains 80 or 90 per cent oxygen. The drug can also enter the fetal circulation and depress the respiratory system with resulting fetal anesthesia, hypoxia and brain damage. Great care must be exercised if cyclopropane is used, so that this complication is not encountered.

Only with the employment of regional methods of anesthesia or in the absence of anesthesia can one be sure that the maternal respirations are affected to the least possible degree. In the event that they are altered 100 per cent oxygen can be administered for an indefinite period without affecting the anesthetic intensity or depth. The routine use of oxygen is advocated during the period of actual delivery.

A discussion of the general indications and contraindications of spinal anesthesia is not warranted here. The only obstetric contraindication is the decision to perform an internal podalic version, in which uterine relaxation is mandatory. Cleland's[11] neurologic study has shown that regional anesthesia limited to the spinal nerves below the tenth thoracic segment will not interfere with uterine tone or contractility. Therefore, it is not suitable in this obstetric maneuver, unless larger dosages of spinal anesthesia are employed. Deep ether is preferred. All other types of delivery can be performed under spinal anesthesia.

No discussion will be entered into regarding spinal anesthesia in cesarean section except to state that it was employed in all sections performed at the Army Air Forces Regional Hospital. The procedure carried no mortality or morbidity and was the method of choice.

The satisfactory and safe employment of spinal anesthesia is considered to depend chiefly on the following factors, which must be rigidly adhered to: the first and most important is the administration of a small amount of anesthetic drug, such as 50 mg. of procaine; the second factor is the introduction of the drug at a low level — that is, the third or fourth lumbar interspace; finally, ephedrine sulfate must be administered just prior to the anesthesia.

It is our opinion that spinal anesthesia has the following advantages in obstetrics: completely painless delivery; complete control over progress of the delivery by the obstetrician; complete relaxation of the perineum; elimination of an inhalation anesthetic and thus a lower incidence of pulmonary complications; no distortion of the perineum by injection of local anesthetic agents; absence of fetal depression due to anesthesia; and suitability for use on patients on whom general anesthesia is contraindicated — that is, its wide range of application.

Summary

A series of 595 patients delivered by the pelvic route under spinal anesthesia is presented. The

technic is outlined, and the results obtained are discussed.

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MEDICAL PROGRESS

CURRENT CONCEPTS OF JAUNDICE, WITH PARTICULAR REFERENCE TO HEPATITIS (Concluded)*

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INFECTIOUS AND SERUM HEPATITIS‡

The etiology of infectious hepatitis, like that of yellow fever, long remained a mystery, owing to a lack of susceptible experimental animals. During the war years, however, it was demonstrated by studies on human volunteers that the agent responsible for outbreaks of acute hepatitis is filterable and that it is present in the blood and stools and perhaps occasionally in the urine and nasopharyngeal washings of infected persons.[47–54] Since it now appears that transmission occurs for the most part by fecal contamination[53, 55–57] and since ordinary chlorination of water fails to inactivate the agent,[58] it is imperative that patients with infectious hepatitis be subjected to isolation precautions similar to those employed in typhoid fever and dysentery, and that the disease be made reportable to public-health authorities.[59, 60] Whether or not transmission also occurs by nasopharyngeal secretions remains an unsettled question.

The term "homologous serum jaundice" arose when it was learned that persons receiving pooled human serum or plasma, even in doses as small as 0.01 cc., were subjected to considerable risk of developing hepatitis.§[52, 62–64] This was found to be true regardless of the form in which the serum or plasma was given. Jaundice was observed after the administration of measles and mumps convalescent serum,[65–69] yellow-fever vaccine containing human serum,[30, 31, 65, 70–78] pappataci-fever vaccine[79] and liquid and reconstituted dried serum and plasma[79–85] and also after transfusions of whole blood.[65, 81, 83, 84]

Freezing, drying and storing do not seem to alter the icterogenic properties of plasma and serum.[64] It is possible that the process of fractionation of plasma also fails to inactivate the hardy agent of hepatitis. In fact, absence of jaundice in the thousands of persons injected with gamma globulin prepared from large pools of adult plasma can perhaps best be explained by the presence of specific antibodies in this fraction.[64] The prevention and attenuation of infectious hepatitis has actually been accomplished by administration of gamma globulin in controlled studies,[86–88] but attempts to prevent homologous serum jaundice by this method have thus far yielded equivocal results. There have been no reports of hepatitis attributable to administration of normal serum albumin, another product of large-scale fractionation,¶ but the lack of such reports may be due to difficulties in conducting follow-up studies.[64]

Since the icterogenic agent may be present in high titer in the blood of infected persons, and since only a small portion of donors are infective, the hazard of jaundice may be increased as the number of donors contributing to the pool is increased, provided specific antibody from some contributors to the pool is not present in amounts sufficient to neutralize the agent.[64, 84] If a single donor is infected, the serum or plasma that he contributes may contaminate the entire pool. Although the period

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In the preparation of this material no attempt has been made to include a complete review of the many controversial aspects of normal and abnormal bile-pigment metabolism. The aim has been merely to present, with illustrations, concepts that seem currently to be most acceptable and most contributory to an understanding of the pathogenesis of jaundice.

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‡More complete reviews of the literature on infectious hepatitis and serum hepatitis have recently been presented by Hardy and Feemster[46] and by Neefe.[48]

§In a paper that appeared after the preparation of this study, Spurling, Shone and Vaughan[51] reported an incidence of 7.3 per cent in 2040 patients receiving transfusions of pooled human serum or plasma. Definite jaundice did not develop within a five-month period of observation in any of 1284 patients given whole blood or in any of 1284 control patients who received no transfusions.

¶Janeway[89] states that during the processing of albumin it is now possible to treat it with heat for ten hours at 60°C., thus exceeding the thermal death time of a well studied strain of serum-hepatitis virus. This precaution has been taken even though there have been no known cases of hepatitis that could reasonably be attributed to the injection of any of the products of plasma fractionation.

of infectivity of hepatitis has not been conclusively established,[90] it is now realized that in the selection of donors for the preparation of serum or plasma or for any type of transfusion, care must be taken to exclude those who have had jaundice, exposure to infectious hepatitis or transfusions or injections of blood, plasma or serum within the preceding year.[64, 84, 91] Donors who constitute the greatest threat are those in the preicteric stage of hepatitis and those who have hepatitis without jaundice.

The exact relation between homologous serum hepatitis and naturally occurring infectious hepatitis is not yet settled.[92] From the comparison presented in Table 1, it is apparent that there are at least two types of hepatitis virus that are immunologically distinct and that their incubation periods differ sharply. It is also significant that stools from patients with serum hepatitis have thus far proved noninfective when administered to human volunteers. Stools from patients with naturally occurring infectious hepatitis, on the other hand, have proved infective in a high percentage of trials. Despite these important differences, it seems likely that infectious hepatitis and serum hepatitis are caused by filterable viruses that are closely related and that the agent of serum hepatitis has been modified through passage from person to person by artificial means.

TABLE 1. *Comparison of Infectious Hepatitis and Serum Hepatitis.*

CHARACTERISTICS	INFECTIOUS HEPATITIS	SERUM HEPATITIS
Etiologic agent:		
Filterable	Yes	Yes
Resistant to heating, freezing and drying	Yes	Yes
Pathogenic for man only	Yes	Yes
Disease transmitted by administration* of		
Serum (P, O, N)	Yes	Yes
Stool (P, O, N, G)	Yes	No
Duodenal washings (O)	Yes[93]	No reports
Urine (O, N)	Irregular[89, 93]	No reports
Nasopharyngeal washings (N)	Irregular[49, 93]	Irregular[47, 94]
Disease spread by personal contact or by fecal contamination of food and water	Readily	Rarely[95]
Incubation period	14-35 days†	40-160 days†
Pathology	Same as that of serum hepatitis	Same as that of infectious hepatitis
Clinical features	Similar to those of serum hepatitis	Similar to those of infectious hepatitis
Attack confers immunity to infectious hepatitis‡	Yes[84]	No[87, 88]
Attack confers immunity to serum hepatitis	No[84, 88]	Yes[84]

*The routes of administration are indicated as follows: P = parenteral; O = oral; N = intranasal (and in certain cases, intrapharyngeal); and G = gastric.

†Reported incubation periods in a few cases fall outside the ranges given. Neefe et al.[95] have shown that the period between inoculation of icterogenic serum or plasma and the first manifestations of hepatitis may be as short as twelve to thirty-five days, although clinical jaundice may not appear until much later.

‡A possible example of heterologous immunity is cited by Oliphant,[93] who produced typical homologous serum jaundice in 4 of 11 volunteers inoculated with serum from a patient with naturally occurring infectious hepatitis; no jaundice developed in 10 inoculated control subjects who had previously had homologous serum jaundice.

Neefe, Gellis and Stokes[54] emphasize the fact that both the virus of serum hepatitis and that of infectious hepatitis can be transmitted by blood, plasma and serum. If the term "homologous serum hepatitis" is applied to all cases developing after the injection of blood products, the two types of viruses must be kept in mind. It must also be appreciated that both viruses can probably be transmitted by the use of unsterilized syringes and needles in the drawing of blood or the injection of any type of substance.[99–102] Transmission is particularly apt to occur in this way when diagnostic, therapeutic or prophylactic procedures are carried out on large groups of people, as in diabetic[103] and syphilitic clinics.[94, 99, 104–109] It seems likely, in fact, that a considerable number of patients who develop hepatitis during the course of antisyphilitic therapy are actually suffering from syringe-transmitted virus hepatitis rather than from the toxic effects of arsenical drugs on the liver. The extent to which arsenic modifies the response of the liver to viral invasion is unknown.[110]

Recent observations by Lucké[111] and others[112–114] confirmed Eppinger's[115] earlier reports that so-called "catarrhal jaundice" is in most cases primarily a hepatitis, the principal lesions in fatal cases being those of acute yellow atrophy. The reported pathological findings in infectious hepatitis are essentially the same as those observed in serum and arsenotherapy hepatitis. Lucké[111, 116] emphasizes the facts that less than 0.5 per cent of cases of epidemic hepatitis terminate fatally and that most patients make a complete and apparently permanent recovery.* There remain, nevertheless, a certain number of patients who survive the initial attack but continue for months or years to have clinical evidence of liver injury. The exact nature of the pathologic processes that take place and the relation between acute hepatitis and cirrhosis are not entirely clear.[28, 29, 34, 118–120]

Bloomfield[28] suggests that the clinical course of hepatitis may be analogous to that of glomerulonephritis so far as latency and chronicity are concerned. Lichtman[121] states, moreover, that in various studies of cirrhosis it is estimated that in 6 to 32 per cent of patients the cirrhotic process may have been initiated by an attack of acute hepatitis. The difficulties in making such estimates are obvious, however, in view of the facts that hepatitis may occur without jaundice[33, 122, 123] and that many cases of hepatitis without clinical icterus have, no doubt, been incorrectly diagnosed as influenza or gastroenteritis. Diagnostic difficulties and other factors, particularly diet, must be taken into account in any evaluation of the relation between acute hepatitis and cirrhosis. It is hoped

*Although the mortality in epidemic hepatitis is uniformly low, that in homologous serum hepatitis is variable. A high mortality from serum hepatitis has been reported, particularly among wounded men.[117]

that more information on the incidence and pathogenesis of latent, recurrent and chronic hepatitis or cirrhosis will be forthcoming during the next decade as a result of follow-up studies on patients who contracted hepatitis, either naturally or by experimental inoculation, during World War II.

Laboratory Tests for Bilirubin and Urobilinogen

The several laboratory tests for hemoglobin derivatives that are most useful in the differential diagnosis of jaundice are worthy of brief comment.

The icteric index, which is determined simply by the matching of serum with standard solutions of potassium bichromate, provides a rough estimate of the degree of bilirubinemia. It does not, however, distinguish between bilirubinglobin and free bilirubin or between bilirubin and the yellow color due to lipochromes, carotene and other substances, which are differentiated by the quantitative van den Bergh determination. The qualitative van den Bergh test has inherent faults, but the adaptation of this reaction by Malloy and Evelyn[124] for the measurement of serum bilirubin with the photoelectric colorimeter has proved to be of distinct value. According to Ducci and Watson,[125] the color that develops within a minute after serum and diazo reagent are mixed — that is, the direct one-minute value — is a quantitative expression of the qualitative prompt direct van den Bergh reaction, presumably owing to the presence in the serum of free bilirubin or sodium bilirubinate. The color that develops within fifteen minutes after serum is mixed with diazo reagent in addition to 50 per cent methyl alcohol is a measure of the total bilirubin — that is, bilirubinglobin and free bilirubin. The difference between the two values probably measures the amount of bilirubinglobin — the so-called "indirect type" of bilirubin — present in the serum. In retention jaundice the direct reading comprises a relatively small fraction of the total bilirubin present, and in obstructive jaundice, the reverse is true; and in the presence of hepatocellular necrosis, variable proportions may be found. Actually, the proportions of the two types of bilirubin present in the serum may fluctuate widely during the course of a single illness. This is particularly true in hepatitis, owing to varying degrees of cellular damage, intrahepatic biliary obstruction and cholangiolitis.

The upper limits for the direct fraction and for total serum bilirubin in subjectively healthy persons are approximately 0.2 mg. and 1.0 mg. per 100 cc.,* respectively.[5, 127–130] The ratio of icteric index to total serum bilirubin concentration in milligrams per 100 cc. cannot be stated accurately, especially for the normal and lower pathologic ranges. According to data available in the literature, the ratio may vary from 5:1 to 10:1, depending on the degree of hyperbilirubinemia, the chemical methods of measurement and, possibly, the proportions of the two types of bilirubin present.[4, 127] Serum with an icteric index of 100, for example, might be expected to have a total serum bilirubin concentration of from 10 to 20 mg. per 100 cc. In the laboratories of the Strong Memorial Hospital the ratio has varied from 5:1 to 8:1 in the higher pathologic range and from 7:1 to 13:1 in the normal and lower pathologic ranges.

Examination of the stool is of the utmost importance in following the course of patients with jaundice. The pale or clay-colored stool, which is found in the presence of regurgitation jaundice, contains excessive amounts of fat and little or no urobilinogen. Diminution in the flow of bile impairs fat digestion and absorption, and since only small amounts of sodium bilirubinate are excreted into the duodenum, the amounts of urobilinogen found in the feces are correspondingly low. Gross inspection of the stool is essential but sometimes misleading because excessive fat may mask the presence of significant amounts of urobilinogen or urobilin.[15] On the other hand, food pigments may give a brown color to stools containing little or no urobilinogen or urobilin.[131] Watson and his associates[132] have recently developed a simplified method for determination of the per-diem excretion of urobilinogen in the feces. It is admittedly crude, compared with more elaborate methods involving extraction with petroleum ether,[133] but it is sufficiently accurate to indicate trends in pigment excretion and sufficiently simple to be carried out quickly by inexperienced personnel. Fecal bilirubin is seldom measured in clinical studies because it escapes reduction to urobilinogen only in the presence of diarrhea and in newborn infants, in whom intestinal bacteria are not yet established.[12]

The simplified method for the determination of urobilinogen is also applicable to the urine.[122, 134] Serial tests of twenty-four-hour specimens or of samples collected between 2:00 and 4:00 p.m. are most useful and can be carried out in a few minutes. The significance of variations in urinary urobilinogen excretion is pointed out below. The foam test for bilirubinuria requires no reagents or equipment but is less sensitive and less specific than Harrison's test.[135, 136] Watson and Hawkinson[137] have recently described a semiquantitative modification of Harrison's test that appears to have merit. Strips of thick retentive filter paper impregnated with barium chloride are dipped in urine and then dried, and a mixture of trichloracetic acid and ferric chloride is applied to oxidize the bilirubin to biliverdin. The depth of the resulting green color is compared with standards to give the approximate concentration in milligrams per 100 cc. This test has the additional advantage of convenience since the two materials

*Somewhat higher figures for total serum bilirubin concentration are obtained by the method of Jendrassik and Grof,[126] which With[127, 128] prefers to that of Malloy and Evelyn.[124] Ducci and Watson[125] attribute the lower values obtained by With for the Malloy-Evelyn procedure to the use of alkali, which was not recommended by Malloy and Evelyn.

required, the impregnated paper strips and the oxidizing agent, are easily prepared and usable for long periods.[138] The Gmelin, iodine, methylene blue[138–141] and other tests[135, 142] for bilirubinuria that have been described are less sensitive than Harrison's test and require no further comment.

Differential Diagnosis

The illustrations presented below will serve to indicate how determinations of bilirubin in the blood and urine and of urobilinogen in the urine and stool may be helpful in the differential diagnosis of jaundice.

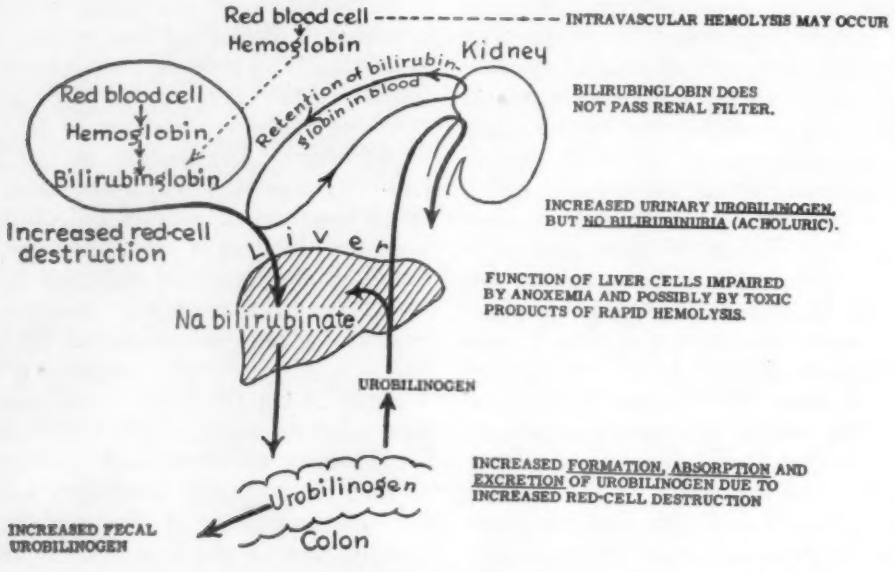

Figure 11. *Abnormalities of Bile-Pigment Metabolism in Retention Jaundice Associated with Hemolytic Anemia.*

Figure 11 shows by means of heavy arrows that in hemolytic anemia increased red-cell destruction results in increased formation of bilirubinglobin, sodium bilirubinate and urobilinogen. The entire red-cell mass may, in fact, be turned over every few days.[143, 144] Despite certain difficulties inherent in its measurement, increased excretion of urobilinogen in the feces is considered the most reliable index of rapid erythrocyte breakdown.[145, 146] Urinary urobilinogen excretion is also increased as a rule during hemolytic processes, but the amounts found in the urine are subject to wide variation, depending on the extent to which urobilinogen is absorbed from the colon and metabolized by the liver. In patients with hemolytic anemia the function of the liver cells is impaired by anoxemia and probably by other factors, with the result that a portion of the excess bilirubinglobin delivered to the blood and carried to the liver from the reticuloendothelial system is retained in the blood. Since bilirubinglobin does not pass the renal filter, hemolytic jaundice is often referred to as acholuric jaundice. Tests for bilirubinuria are negative, but the amounts of urobilinogen found in the urine may be considerably increased if the liver is unable to re-excrete the large quantities absorbed from the colon. In acute hemolytic processes, such as blackwater fever, red cells may be destroyed intravascularly, and the liberated hemoglobin may be excreted in the urine if the renal threshold is exceeded. If hemolysis is extensive, part of the hemoglobin may be broken down to hematin, which then unites with albumin to form methemalbumin, an apparently toxic substance. A large portion of the liberated hemoglobin, however, is picked up by the reticuloendothelial system and converted to bilirubinglobin in the usual way.[17]

Figure 12 indicates that, in cases of constitutional hepatic dysfunction, the only abnormality appears to be the retention of bilirubinglobin in the blood due to functional impairment of liver cells. Bilirubinglobin does not pass the renal filter, and hence the jaundice is acholuric, as in cases due to hemolytic anemia. Red-cell destruction proceeds at a normal pace, and despite the fact that some bilirubinglobin is retained in the blood, the rates of formation and excretion of sodium bilirubinate and urobilinogen are normal or only slightly reduced.[24]

Regardless of the cause, jaundice of the retention type is nearly always mild. The icteric index is seldom above 30 or 40, and the quantitative van den Bergh determination reveals that most of the serum bilirubin is of the indirect variety.[5]

The abnormalities of pigment metabolism that may be present in either toxic or infectious hepatitis are presented in Figure 13. Sodium bilirubinate that has regurgitated around the necrotic cells and

re-entered the blood passes the renal filter, and if sufficient quantities are excreted in the urine, one or more of the various tests for bilirubinuria are positive. Since bilirubinuria often precedes clinical jaundice, the highly sensitive Harrison test is useful in screening large groups of persons who are suspected of developing hepatitis — that is, those exposed to noxious chemicals or to epidemic hepatitis and those who have received icterogenic lots of human serum or plasma. As stated above, the quantitative van den Bergh test may give variable results in hepatitis, but at the time of maximal jaundice, the larger portion of the serum bilirubin is of the direct variety.[129] The amounts of sodium bilirubinate entering the intestine from the liver also vary widely, depending on the extent of cellular

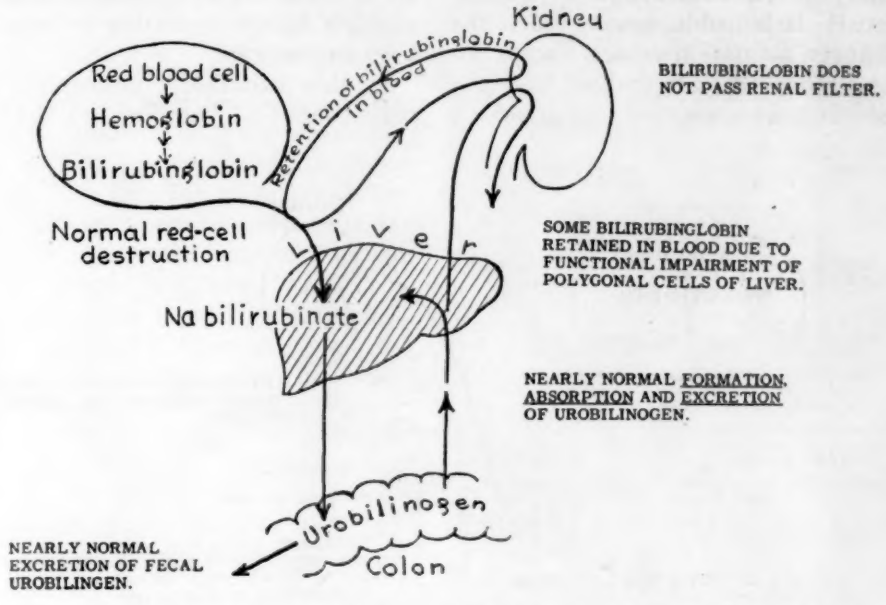

FIGURE 12. *Abnormality of Bile-Pigment Metabolism in Retention Jaundice due to Constitutional Hepatic Dysfunction.*

jaundice, the highly sensitive Harrison test is useful in screening large groups of persons who are suspected of developing hepatitis — that is, those exposed to noxious chemicals or to epidemic hepatitis and those who have received icterogenic lots of human serum or plasma. As stated above, the quantitative van den Bergh test may give variable results in hepatitis, but at the time of maximal necrosis and associated intrahepatic biliary obstruction and leakage from damaged cholangioles. The badly injured liver, however, cannot handle its usual large share of any urobilinogen absorbed from the colon; hence much of the absorbed urobilinogen is excreted in the urine.

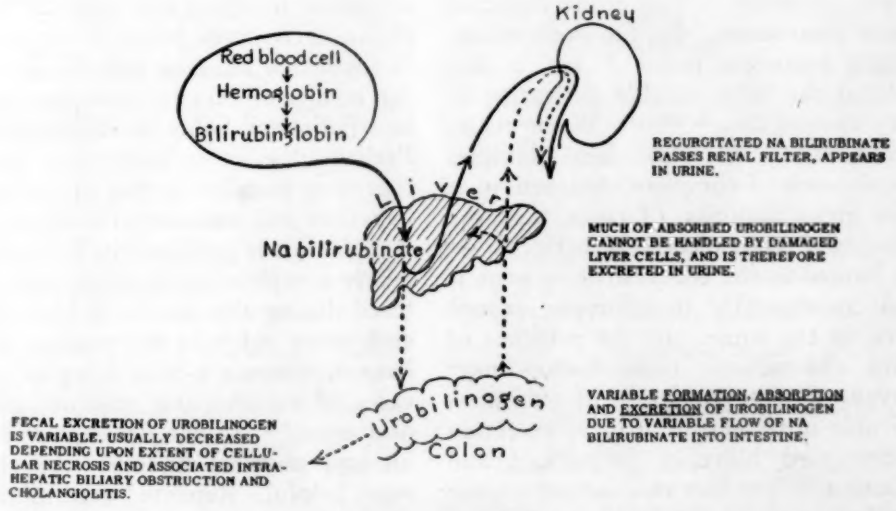
Kidney
Red blood cell
Hemoglobin
Bilirubinglobin
REGURGITATED NA BILIRUBINATE PASSES RENAL FILTER, APPEARS IN URINE.
Liver
MUCH OF ABSORBED UROBILINOGEN CANNOT BE HANDLED BY DAMAGED LIVER CELLS, AND IS THEREFORE EXCRETED IN URINE.
Na bilirubinate
VARIABLE FORMATION, ABSORPTION AND EXCRETION OF UROBILINOGEN DUE TO VARIABLE FLOW OF NA BILIRUBINATE INTO INTESTINE.
Urobilinogen
Colon
FECAL EXCRETION OF UROBILINOGEN IS VARIABLE, USUALLY DECREASED DEPENDING UPON EXTENT OF CELLULAR NECROSIS AND ASSOCIATED INTRAHEPATIC BILIARY OBSTRUCTION AND CHOLANGIOLITIS.

FIGURE 13. *Abnormalities of Bile-Pigment Metabolism in Regurgitation Jaundice due to Hepatitis.*

Figure 14 serves to emphasize the fact that sodium bilirubinate that regurgitates into the blood as a

result of biliary obstruction passes the renal filter and appears in the urine, as in cases of hepatocellular necrosis. Extrahepatic block due to calculi is relatively incomplete and transient, but in about 90 per cent of cases in which malignant tumors involve the biliary tract, obstruction eventually becomes complete.[15] If bilirubin cannot reach the intestine, urobilinogen formation ceases, except for the few milligrams a day that are derived from the intestinal mucosa. It has been stated that increased seen in active cases, and pigment stones, which may eventually obstruct the common duct. Jaundice in such patients may then be attributed not only to increased bilirubin production but also to biliary obstruction and to hepatocellular damage caused by both anemia and increased biliary pressure. The multiple factors operating in hepatitis have already been enumerated.

In this admittedly incomplete formulation, the pathogenesis of jaundice has been considered only

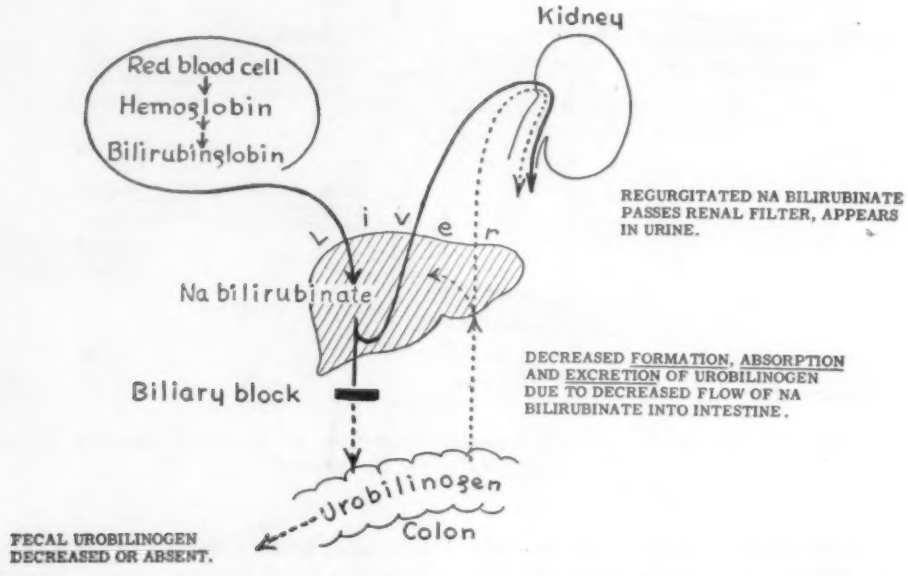

FIGURE 14. *Abnormalties of Bile-Pigment Metabolism in Regurgitation Jaundice due to Biliary Obstruction.*

fecal urobilinogen excretion is the prime index of rapid erythrocyte destruction. By the same token, fecal urobilinogen excretion below 5 mg. a day may be considered the most reliable indication of complete biliary obstruction.[15, 147, 148] When examinations of consecutive four-day fecal samples indicate the persistence of complete obstruction, it is found in the great majority of cases that the patient is suffering from cancer. If little or no urobilinogen is formed in the colon, little or none is reabsorbed and consequently urobilinogen cannot be demonstrated in the urine. In the presence of complete biliary obstruction, three factors may operate to prevent the accumulation of enormous amounts of bilirubin in the serum: urinary excretion of bilirubin; decreased bilirubin formation; and bilirubin destruction.[12] The last two factors require further study.

It should be emphasized that most of the various types of jaundice cannot be placed in airtight compartments, distinct unto themselves. Patients with chronic hemolytic anemia, for example, are prone to develop plugs or thrombi of inspissated bile, which block the smaller canaliculi and which may explain the occasional rise in direct serum bilirubin as related to laboratory tests for the various hemoglobin derivatives found in blood, urine and stool. It should be stressed that hematologic studies and the results of certain liver-function tests may also be of distinct value in differential diagnosis.[149–151] Perhaps the most important diagnostic problem regarding jaundice is that of distinguishing between hepatitis and extrahepatic biliary obstruction — a matter that is particularly difficult when a phase of nearly complete intrahepatic obstruction is encountered during the course of hepatitis. Operation in such cases subjects the patient to an unnecessary hazard, whereas a long delay of operation in some cases of extrahepatic obstruction may also prove disastrous.[152] In the decision of such an issue, the history, physical findings and clinical course are most helpful. Repeated determinations of bilirubin in the blood and urine and of urobilinogen in the urine and stool are of distinct but nevertheless secondary value. Inasmuch as the pathologic processes responsible for jaundice are not static, it is essential that time relations be taken into consideration when the results of any laboratory procedures are interpreted. When decision regarding the etiology of jaundice is difficult, the clinician

obtains the best results by using and repeating at appropriate intervals a selected group of liver-function tests with which he is most familiar. Since surgery is likelier to be harmful than helpful in such cases, a period of observation to determine the course of the illness will usually prove to be time well spent.[131]

* * *

The principal objective of this presentation has been to review current concepts of the mechanisms by which jaundice may be produced. With these mechanisms in mind, it is possible to arrive at an accurate diagnosis and to prescribe treatment in most cases on the basis of repeated bedside observations and relatively simple laboratory tests. It therefore seems inappropriate in this brief treatise to present elaborate tables of differential diagnosis and a hurried résumé of current therapeutic methods. In closing, I should like merely to state that Plato's familiar words concerning the practice of medicine seem particularly applicable to the management of the jaundiced patient: "This is an art which considers the constitution of the patient and has principles of action and reasons in each case."

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MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE COUNCIL

Annual Meeting, May 19, 1947

THE annual meeting of the Council was called to order by the president, Dr. Dwight O'Hara, on Monday, May 19, 1947, at 7:00 p.m., in the Georgian Room of the Hotel Statler, Boston.

Present were one hundred and eighty-eight councilors (Appendix No. 1).

After opening the meeting the President read the following obituary notices:

ENOS HOYT BIGELOW — On March 13, 1947, past-president Enos Hoyt Bigelow died in Framingham, where he was born ninety-one years ago. He was educated at Worcester Polytechnic Institute and Harvard Medical School, graduating from the latter and beginning practice in Framingham in 1882.

During the sixty-odd years that Dr. Bigelow practiced medicine, he had an active interest in public affairs of many sorts. In 1912 he was elected a representative in the State Legislature and in 1914 became House chairman of the Public Health Committee, from which position he rendered much assistance to the Society's Committee on State and National Legislation. In 1917 Dr. Bigelow became chairman of the Society's Committee on Public Health, a position that he held for a period of years. It is of interest that these were the years during which his son George was deciding on what was to become for him a brilliant but tragic career in public health.

Dr. Bigelow served on the Board of Health and the School Committee in Framingham, he was a trustee of the Andover-Newton Theological School, a member of the American Board of Foreign Missions, president of the Boston Seaman's Friend Society, the Framingham Trust Company and the Framingham Home for the Aged. He was a councilor from Middlesex South District Medical Society for many years and was president of the Massachusetts Medical Society in 1923 and 1924. Throughout his life and well into the present decade, Dr. Bigelow faithfully attended his district society meetings, and until recent years he was frequently present at the meetings of the Council.

Men like Dr. Bigelow are missed; his personality was an amiable and enthusiastic influence wherever he appeared. All of us regret his passing, even as we are grateful that he was granted such a long and useful life.

HILBERT FRANCIS DAY — Hilbert F. Day, for many years a councilor from the Middlesex South District Medical Society, passed away on May 16, 1947. He was sixty-eight years old.

Born in Roxbury, he graduated from Roxbury Latin School, of which he became a life-trustee, from Yale University and from the Harvard Medical School in 1905. He had for many years made his home in Cambridge.

Dr. Day held many prominent professional positions, including those of senior surgeon at the Cambridge Hospital, surgeon-in-chief at the Boston Dispensary, professor of clinical surgery at Tufts College Medical School, consulting surgeon to many Greater Boston hospitals and president of the Middlesex South District Medical Society. He was a fellow of the American College of Surgeons and a diplomate of the American Board of Surgery.

Although in frail health during recent years, Dr. Day maintained a lively interest in a great variety of medical activities, including such causes as those of the Washingtonian Hospital, the Massachusetts Medical Benevolent Society, the Cambridge Tuberculosis and Health Association and the Family Society of Boston. His capacity to maintain these interests was an example of courage and firmness of purpose that evoked the admiration of his many friends. He will be long and well remembered by those with whom he worked.

DANIEL JAMES ELLISON — On February 15, 1947, death suddenly took Daniel J. Ellison, of Lowell. Dr. Ellison was born in Rochester, New York, sixty years ago. His father before him, and two of his brothers were also physicians.

He graduated from Tufts College Medical School in 1908 and subsequently served an internship at the Cambridge Hospital. He first practiced medicine in Alton, New Hampshire, moving to Lowell in 1915, at which time he was admitted to fellowship in the Massachusetts Medical Society. In Lowell, Dr. Ellison practiced continually until his death, except for a period of military service in World War I. In addition to his membership in the Society, he belonged to the American Medical Association, the American Heart Association and the New England Obstetrical Society and was a past president of the Middlesex North District Medical Society. He was a founder of the Lowell Medical Club and a staff member of the Lowell General, the St. John's and the St. Joseph's hospitals in that city. He was widely recognized and called upon in his district as a cardiologist and consultant in that field.

Dr. Ellison was a member of the Committee on Public Relations, representing the Middlesex North District Medical Society, and also served on several important subcommittees in connection with labor and industrial relations. He was chairman of the Subcommittee to Meet with the Medical Advisory Committee of the Industrial Accident Board. In these services Dr. Ellison could be always relied on to express himself and those he represented, incisively and with independence. He was also chairman of the Committee on Post-Payment Medical Care. Altogether he was most generous of his time and energy in rendering these services to the Society.

Last February, when the Council directed that its felicitations be expressed to our convalescing secretary, the mission was entrusted to Dr. Ellison, his friend and fellow townsman. Dr. Ellison responded with characteristic thoroughness and enthusiasm; it was probably his last service to the Council, and one for which I fear we never thanked him, for he died within the week. For his many services to the Society we are grateful.

ARTHUR WARREN HAYES — On March 11, 1947, Arthur Warren Hayes, of Greenfield, was stricken and within a few hours died at the Farren Memorial Hospital in Montague.

Dr. Hayes was born in Lynn in 1891 and was educated at the Lynn Classical High School. He graduated from Tufts Dental School and later from Middlesex College of Medicine and Surgery. He settled in Greenfield. For twenty-two years he served on the Greenfield Board of Health and was chairman of that board. He was associate medical examiner for the Greenfield Draft Board from 1941 on.

Dr. Hayes specialized in roentgenology; he was a member of the Radiological Society of America, a diplomate of the American Board of Radiology and a fellow of the American College of Radiology. In 1942 and 1943 he served as president of the Franklin District Medical Society and had been a member of the Council since 1943.

MICHAEL ALOYSIUS TIGHE — Michael A. Tighe was sixty-five years old. He graduated from Boston College in 1903 and from Harvard Medical School in 1908. He had always practiced in Lowell, where he was city physician and associate medical examiner for many years. He was a member of the American Medical Association, the American College of Surgeons and the Harvard Club of Boston. He was a past president of the Middlesex North District Medical Society, and chief of the Surgical Staff at St. John's Hospital in Lowell. He became secretary of the Massachusetts Medical Society in 1941.

When the Council last met, on February 5, we joined in extending our greetings to Dr. Tighe. He responded on February 10, in part as follows: "I hope to express in person at some future time my very great appreciation of the Council's action in directing you to express its high regard for me, its sorrow at my illness and its hope for my complete and rapid recovery."

This hope was not fulfilled, for after a partial return to his accustomed activities, Dr. Tighe was stricken again and died within a short time on April 8. Had it been otherwise ordained Dr. Tighe would, perhaps at this very moment, express to you his appreciation of our mutual regard for him. In the realm of human relations this would be nothing less than a mirror image of his regard for each one of us. I venture to say that there is among us today no one who holds the Society in greater reverence and affection than did Michael Tighe. I feel confident that he would be proud to have us stand now in tribute to all fellows of the Massachusetts Medical Society who have died during the past year, including himself, for he was one who loved his fellow men.

The Council stood in tribute to the departed members.

The President announced the following interim appointments, which were confirmed by vote of the Council:

To the Subcommittee on Mental Health, authorized by the Council on February 5, 1947:
Walter E. Barton, Norfolk
William Malamud, Worcester
Henry A. Tadgell, Hampshire

To the Special Advisory Committee on School Medical Services, authorized by the Council on February 5, 1947:
Stewart H. Clifford, *Chairman*, Middlesex South
Elmer S. Bagnall, Essex North
Florence McKay, Suffolk
Joseph Garland, Suffolk
James O. Wails, Worcester
George L. Steele, Hampden
Ernest Morris, Middlesex South

To fill the unexpired term of Secretary due to Dr. Tighe's death:
Joseph Garland, Suffolk

To fill the vacancy on the Council due to the death of Dr. Day:
Sylvester B. Kelley, Middlesex South

The Secretary submitted the record of the meeting of the Council of February 5, 1947, as published in the *New England Journal of Medicine*, April 17, 1947, and moved its acceptance. The motion was duly seconded. Before calling for a vote, the President read the following statement:

The Council will remember that the vote to support the Boston Medical Library was conditioned by two amendments to the effect that such support be legally appropriate to the purposes of the Society and that the Library be asked to indicate what services it might be able to provide the fellows of the Society in return for this support.

These conditions have been followed up to the point that we can announce that there are no legal impediments in the mind of our attorney, Mr. Dodge, who has provided a statement to this effect. We have here a copy of this statement, which may be viewed by anyone interested or may be read aloud if the Council wishes.

In regard to the second condition the Trustees of the Boston Medical Library are working on a series of suggested changes in their by-laws. These changes contemplate an increase in the number of trustees from twelve to sixteen, the four new members to be appointed by the president of the Massachusetts Medical Society. It is likewise contemplated that a new class of membership in the Library be instituted, to include every fellow of the Society in good standing, who will thus become what will be known as a Massachusetts Medical Society member of the Boston Medical Library. Just what the privileges of such membership will be cannot yet be determined, but they will certainly be no less ample than those of other existing memberships at the present time. A copy of these suggested changes as they are currently conceived by the Trustees of the Library is here and is likewise open to inspection or can be read if the Council so desires.

The report was then accepted by vote of the Council.

REPORT OF THE TREASURER

This report (Appendix No. 2) was offered by the treasurer, Dr. Eliot Hubbard, Jr., Middlesex South, as published in the pamphlet of advance information, with one minor correction noted in the mimeographed report of the Executive Committee. Its acceptance was moved and seconded and was so ordered by vote of the Council.

REPORTS OF COMMITTEES

Executive Committee — Dr. Joseph Garland, Suffolk, *Secretary*.

The Secretary submitted the report of the meeting of April 23, 1947, as circulated in mimeographed form (Appendix No. 3), and moved its acceptance. The motion was seconded, and it was so ordered by vote of the Council.

Auditing Committee — Dr. Howard B. Jackson, Norfolk, *Chairman*, and Dr. Frank T. Downey, Middlesex South.

The chairman being absent, this report, which is as follows, was presented by the President:

The Auditing Committee appointed the firm of Hartshorn and Walter, accountants and auditors, to audit the books and accounts of the Massachusetts Medical Society. This audit and account are hereby approved by us.

The analysis of the revenues and expenses of the Society and the balance sheet of the condition of the funds of the Society have been inspected and approved by us.

Its acceptance was moved and seconded, and it was so ordered by vote of the Council.

Committee on Arrangements — Dr. Sidney C. Wiggin, Suffolk, *Chairman*.

The following report was presented by the chairman:

The Committee on Arrangements wishes to report on the final program for the annual meeting — May 20, 21 and 22.

We believe that an exceptionally interesting program has been arranged for the general practitioner and that the section luncheon programs will be of unusual interest and value to the specialty fields.

We wish to call your attention to the technical exhibits in the ballroom and foyer. These cover the development of many new medical supplies and equipment and much can

be gained from them. We wish to encourage the co-operation of every member of the Society in visiting these booths during the meeting, as it is the income from their rental that makes meetings such as this possible.

The medical exhibits have not come up to our expectations and we would suggest another year that special effort be made to stimulate the members of the Society and especially the hospitals to develop exhibits of their most interesting medical developments that would be of help to the general practitioner of Massachusetts.

This year the members of the Massachusetts Physicians' Art Association, formerly the Boston Physicians' Art Society, are having their first exhibit in conjunction with the annual meeting at the Hotel Statler. This is the first exhibit of its kind since 1938. It is being organized by Dr. James C. Janney, vice-president of the Association. This should prove of great interest to the members of the Massachusetts Medical Society and their wives.

Its acceptance was moved by the chairman, was seconded and was so ordered by vote of the Council.

Committee on Ethics and Discipline — Dr. Ralph R. Stratton, Middlesex East, *Chairman.*

The following report was presented by the chairman:

During the past year between fifty and sixty complaints and inquiries concerning ethical procedures have been received by the committee, necessitating much investigation and six all-day and two special sessions of the committee.

There have been rather more inquiries as to ethics and procedures this year than usual coming from all parts of the Commonwealth, indicating a more healthy ethical sense on the part of the members at large.

Several fellows have been deprived of membership in the Society because of the decisions of the State Board of Registration of Medicine and Chapter 1, Section 9, of our by-laws. This separation has been without any loss to the efficiency and dignity of the Massachusetts Medical Society.

Numerous run-of-the-mill complaints have been received and investigated. Following conversations with the chairman several of these complaints have been withdrawn. The others have been investigated and viewed by the committee and settled on their merits without any loss of prestige to the fellow and with greater or less satisfaction to the complainant.

A number of complaints against fellows of more serious nature have been received and investigated. These included such complaints as unethical advertising, serious neglect in the care of a patient by the physician and overcharging for value received. All these cases have been investigated, reviewed and settled by the committee. Space does not allow further elaboration.

Two cases, however, must be discussed. The first is a complaint of fellow against fellow for definite violation of the *Code of Ethics* in his treatment of the other fellow's rights. The fellow was found guilty of deliberate violation of the code, was reprimanded by the committee, ordered to apologize to the offended fellow and referred to the President for censure. A copy of an apology was received by the committee, the President notified us that the censure had been applied and the case was considered closed.

In the second case, a physician complained that a fellow used language at a public hearing derogatory to his reputation and standing as a physician, which language unfortunately was published in the newspapers. In conversation with the chairman, the fellow offered to apologize to the offended physician, the committee accepted this offer and requested the fellow to send an apology to the offended physician and forward a copy to the committee. Upon receipt of this apology the matter was considered closed.

The committee was unhappy and somewhat concerned at the receipt of these two apologies, for while they were apologies they were couched in such language that the committee felt that in neither case did the fellow show any penitence for his deed. The committee will watch with interest the future ethical observances of these two fellows, that of the first because during his interrogations he showed a definite ignorance of what constitutes ethical conduct and that of the second because of his apparent indifference to the code by reason that this is the second time within a comparatively few months that he has been obliged to apologize to a fellow for unethical acts.

In this connection, the Committee on Ethics and Discipline calls attention to the following circular, which has been prepared under the auspices of the supervising censors:

Attention of the Candidate

When you are admitted to membership in the Massachusetts Medical Society, you will be supplied with its *Code of Ethics* and with the *Principles of Medical Ethics* of the American Medical Association, to all of which you shall be required to subscribe.

You are urged to study this code and these principles to the end that you may conduct your professional life in a manner befitting an honorable physician.

So that you may have some preliminary knowledge in this subject the supervising censors submit to you at this time a brief summary of these requirements.

You shall be required to regard the welfare of your patients as taking precedence over your own comfort or your financial or other material gain.

They shall receive at your hands thorough examination and sympathetic treatment of their ills. You shall make due allowance for their peculiarities.

The seal of secrecy shall govern your relations with them to be broken only in accordance with the civil law of the Commonwealth or on the direct order of the civil authority.

Their ailments, therefore, shall not be the subject of gossip.

You shall encourage sound medical learning as the *sine qua non* of good medical care and as a corollary of this you shall distinguish between legitimate medicine and quackery and have no part or interest in the development or distribution of secret remedies.

You shall call attention to your professional qualifications only by the performance of work well done.

You shall not seek professional advantage at the expense of a fellow practitioner. Honor and courtesy shall govern your relations with him.

You shall not by actual act or by innuendo seek to divert another's patient to yourself.

The practice of fee splitting is forbidden in any guise whatsoever.

It will be your obligation to contribute your time and energy to the end that the Massachusetts Medical Society may continue to represent the ideals of the medical profession.

Inquiry has revealed the fact that a supply of these circulars has been distributed to the district secretaries by the Secretary, with the direction that each applicant be handed a copy with his application, that he be examined on its contents and that the censors determine his fitness for membership to a large extent by the answers that he gives.

The Committee on Ethics and Discipline recommends that the Council by its vote give further emphasis to the importance of this procedure and that the Secretary be instructed to so notify the district secretaries.

The acceptance of the report was moved by the chairman. The motion was seconded and it was so ordered by vote of the Council.

Dr. Stratton then went on to call to the attention of the Council the recommendation that the Committee on Ethics and Discipline was making concerning the notice that had been drawn up by the supervising censors and was presented to each candidate for admission to the Society. He said that it was

the belief of the committee that this notice should be given the approval of the Council, because after its perusal no candidate could come into the Society without a working knowledge of the *Code of Ethics* of the Society and *Principles of Medical Ethics* of the American Medical Association. It was brought out by Dr. Stratton that in the last few years a number of cases have come before the committee in which the offending fellow had apparently no acquaintance with the *Code of Ethics* and knew nothing about ethical procedure with regard to his relations with his fellows. This synopsis of the *Code of Ethics* constitutes part of the material on which the candidate is examined by the censors of his district.

Dr. Stratton then read the recommendation of the committee and moved its adoption, to give emphasis to the *Code of Ethics* of the Society. The motion was seconded.

Dr. Carl Bearse, Norfolk, offered as an amendment to the motion that a copy of the notice also be sent to every member of the Society with the next general mailing. After some discussion the amendment was adopted.

Dr. Stratton moved the adoption of the recommendation as amended. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Public Relations — Dr. Albert A. Hornor, Suffolk, *Secretary*.

This report, which follows, was presented by the President. It is divided into three items, which were recommended for acceptance by the Executive Committee:

1. The Subcommittee on Insurance Relations, which was appointed in accordance with the direction of the meeting of the Council in October, 1946, made the following report to the Committee on Public Relations:

> The committee is aware of the desire and interest of the American Medical Association in the development of plans for prepayment medical care throughout the United States. Several years ago the Massachusetts Medical Society took steps aimed at the provision of prepayment medical care for the people of Massachusetts and has placed in operation a plan to effect this idea. This program has now been subscribed to by over half a million people in this state and is rapidly increasing in its acceptance by the public.
>
> This committee feels that any plan aimed at extending the opportunity for prepayment medical benefits to the residents of this State is commendable.
>
> HAROLD G. GIDDINGS
> A. J. A. CAMPBELL
> NORMAN A. WELCH
> DONALD MUNRO, *Chairman*

This report was accepted and approved by unanimous vote of the Committee on Public Relations.

The Committee on Public Relations recommends that this report be accepted and approved by the Council and that the subcommittee be discharged.

2. In accordance with the instructions of the Council at its February meeting in 1946, the Committee on Public Relations has studied the question of establishment of a women's auxiliary to the Massachusetts Medical Society. This has been reported on three times by the subcommittee, consisting of Dr. Milton J. Quinn, chairman, Dr. Harold R. Kurth and Dr. Albert A. Hornor.

At the November meeting of the Committee on Public Relations each district society representative on the Committee on Public Relations was directed to bring the opinion of his respective society to the next meeting of the Committee on Public Relations.

At the meeting March 19, 1947, reports from eleven district societies were recorded, as follows: five in favor, four opposed and two no action. The Committee on Public Relations recommends:

> That the Council extend to each district the privilege of forming, at the district's pleasure, a women's auxiliary. That the Council authorize the Committee on Public Relations to aid in the organization of these said units.

3. As a report of progress the Committee on Public Relations submits the following items:

> The establishment of a Speaker's Bureau was discussed. Dr. John Conlin, who was present as a guest, told us that when he began to work he wanted to be able to come to the committee for help and guidance. The problem was discussed freely by all present and it was decided that each member of the Committee on Public Relations would come to the next meeting prepared to discuss this question with Dr. Conlin.
>
> Dr. Harold R. Kurth, representative of the Essex North District Medical Society, made the following report:
>
> > At a meeting of the Essex North District Medical Society there was considerable discussion between the members of the society and Mr. R. F. Cahalane, director of the Blue Cross, with reference to the payment of anesthetist's fees by the Blue Cross. Under the present ruling the Blue Cross pays anesthetist's fees only to those individuals who are regularly employed as anesthetists by the hospitals.
> >
> > It is the feeling of the members of this district that this present arrangement prevents many private physicians who give anesthesia to Blue Cross patients from being paid an anesthetist's fee, simply because they are not regularly employed as such by the hospital, whereas the regularly employed anesthetist of the hospital is paid. In some cases these regularly employed anesthetists are merely nurses, trained in anesthesia.
> >
> > Therefore, the Essex North District Medical Society presents the following resolution to the Massachusetts Medical Society, namely:
> >
> > That the whole question of the payment of anesthetist's fees by the Blue Cross be reconsidered.
>
> This report brought general discussion of the subject of the relation of the members of the Massachusetts Medical Society to the Blue Cross and the Blue Shield. It was moved by Dr. Charles D. McCann, Plymouth, and seconded by Dr. Kurth that the chair appoint a committee of three to investigate this problem and report at the next meeting of the Committee on Public Relations, if necessary having a special meeting to discuss these problems. The committee was instructed to get from each member of the Committee on Public Relations his ideas of the problems presented and what should be done about them.
>
> This motion was passed unanimously and the chair appointed, as members of that committee, Dr. Kurth, Dr. McCann and Dr. Albert A. Hornor.

The first item comprises the report of the Subcommittee on Insurance Relations and contains the recommendation, "Any plan aimed at extending the opportunity for prepayment medical benefits to the residents of this state is commendable."

Dr. Bagnall, Essex North, in discussion, questioned the wisdom of such an inclusive endorsement of prepayment medical benefits and moved that the report be returned to the subcommittee for further study. This motion was seconded.

Considerable discussion was participated in by Drs. William E. Browne, Suffolk, Donald Munro, Suffolk, Frank R. Ober, Suffolk, and Peirce H. Leavitt, Plymouth. Dr. Leavitt offered as an amendment to Dr. Bagnall's motion that "any plan aimed at extending the opportunity for prepayment medical benefits to the residents of this state may be commendable." This amendment was seconded.

Dr. Sosman, Suffolk, offered a further amendment to make the last sentence of the report read:

> This committee feels that any plan which conforms to the basic principles adopted by the Society in regard to medical-service plans and which is aimed at extending the opportunity for prepayment medical benefits to the residents of this state is commendable.

This amendment was seconded. After further discussion, the question was put to vote and Dr. Leavitt's amendment was defeated. Dr. Sosman's amendment was then put to vote and adopted by the Council, after which the recommendation as a whole was adopted.

The second item in the report of the Committee on Public Relations concerns the establishment of a women's auxiliary within the Society. The committee report recommended action by the Council to permit the establishment of women's auxiliaries within the district societies and to authorize the Committee on Public Relations to aid in the organization of these units.

Dr. Milton J. Quinn, Middlesex East, spoke in favor of the recommendation so convincingly that Dr. Bearse, Norfolk, offered the following amendment, "In addition to the districts being privileged to form these women's auxiliaries, there also be established a women's auxiliary to the Massachusetts Medical Society." This motion was seconded by Dr. Quinn and was so ordered by the Council.

The main recommendation of the committee, to permit the establishment of women's auxiliaries within the districts, was then put to vote and was so ordered by the Council.

The remainder of the report of the Committee on Public Relations gave information on two points, first, the establishment of a speakers' bureau, and second, a discussion that had taken place within the Essex North District with reference to the payment of anesthetist's fees by the Blue Cross.

President O'Hara, in mentioning this part of the report, made the Council aware of action that would be asked of the Council on this subject later in the meeting.

The entire report of the Committee on Public Relations was then accepted by the Council.

Committee on Legislation — Dr. George R. Dunlop, Worcester, Dr. David L. Belding, Norfolk South, *Co-chairmen.*

The following report was offered by Dr. Dunlop:

Since the opening of the 1947 session of the Massachusetts Legislature in January, there has been one meeting of the committee and three meetings of the executive subcommittee, at which a total of thirty-nine bills has been considered. It has been voted to favor seven, oppose thirteen, and take no action on nineteen of these bills. The "no action" bills have been chiefly concerned with general sanitation, departmental activities and economic problems not intimately connected with the practice of medicine. Favorable action has been taken on five bills of the Massachusetts Department of Public Health, the one concerning blood tests in illegitimacy (H. 145), and that covering tuberculosis in school teachers (H. 705).

The bills opposed by your committee are those that lower medical standards and limit medical practice and research. The important chiropractic bill (S. 151) was given leave to withdraw by the Legislative Committee on Public Health at the request of the petitioners. S. 26 and H. 974 for opening hospitals to all physicians have been successfully opposed. H. 1211, which would lower standards for licensed attendants, has been withdrawn. H. 706 relating to the College of Physicians and Surgeons, H. 633 regarding the unionization of hospital employees, H. 541 revoking certain powers of medical examiners and three minor bills have been opposed. The antivivisection bills (S. 47, H. 126 and H. 1361) were reported unfavorably by the Legislative Committee on Legal Affairs. Opposition was efficiently handled by a special Committee on Antivivisection with members from the three Massachusetts medical schools, the Massachusetts Medical Society and the Associated Catholic Hospitals.

At the February meeting, the Council voted that the Committee on Legislation aid in expediting Dr. Getting's program for (1) raising the salary level of the professional personnel engaged in public health on a state or local basis; (2) instituting a sanitary code; (3) providing subsidization of local health departments; and (4) promoting town unions of adequate size to support a modern public and school health program. The last two topics are not under consideration by the Legislature this year. Your committee has favored the sanitary-code bill (H. 78). It has presented to Governor Bradford the recommendation of the Massachusetts Medical Society that the professional salaries in the Department of Public Health and the Department of Mental Health be placed at levels that will allow Massachusetts to compete with outside agencies. It has also obtained the co-operation of the *New England Journal of Medicine* in publishing an editorial on this subject.

On March 27, Dr. Bagnall, chairman of the Subcommittee on National Legislation and the official representative of the Council, appeared before the Senate Committee on Expenditures in the Executive Departments at Washington and recorded the opposition of the Society to S. 140 and S. 712, bills creating a tripartite department of health, education and security. The Subcommittee on National Legislation finds that the Taft Bill (S. 545) in general conforms to the principles established by the Massachusetts Medical Society, but that certain minor changes are necessary to make it acceptable. The Committee on Legislation will present the views of the Society before the appropriate committee when hearings on the bill are held at Washington.

The announcement by Dr. Dunlop that all thirteen bills opposed by the committee were rejected by the Legislature was greeted with applause.

Of the seven bills favored, one was enacted and among the four rejected was H. 78, on the sanitary code, which the Council had favored at the February meeting. Two bills, that for licensing of hospitals and the bill requiring x-ray examination of chests of schoolteachers, were still in committee. The report was accepted by the Council.

Committee on Medical Defense — Dr. Arthur W. Allen, Suffolk, *Chairman.*

The following report was offered by Dr. Allen:

We now have seven cases pending. During the past year, we have disposed of three suits — one of these was dismissed for lack of prosecution and the other two were settled out of court.

Five new cases have been added during the past year. This is a definite increase over recent years. We believe that some of these will not be brought to trial for lack of evidence. One or two of them may prove to be quite troublesome.

There has been increasing difficulty in obtaining satisfactory expert witnesses for the defense of our fellows. Councilors are urged to assist our attorneys in these matters whenever possible. Many members of the Society have given freely of their time and advice when called upon.

The charges for legal services for the past year amounted to $1,167.75. This represents the entire expenditure of this committee.

Dr. Allen moved the acceptance of the report. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Publications — Dr. Richard M. Smith, Suffolk, *Chairman.*

This report (Appendix No. 4) was submitted as published in the circular of advance information. Dr. Smith moved its acceptance. The motion was seconded, and it was so ordered by vote of the Council.

Committee on Veterans' Affairs — Dr. G. Philip Grabfield, Suffolk, *Chairman.*

This report is as follows:

The committee has held no formal meetings since our last report because no questions have been referred to it and none of the members had any suggestions to make on which action was necessary. It appears that most of the immediate veteran's problems have been considered and solved in so far as it was possible for the Society to do so. The committee is unanimous in feeling that any committee that has no work to do should be dissolved and yet it is hesitant about a firm recommendation to terminate its existence due to the doubt that exists as to the possibility of further veterans' problems being brought before the Society.

It is therefore recommended that the Veterans' Committee remain in existence until after the annual meeting in 1947 in order to deal with any veterans' problems that may come up at that time and that if no such problems appear at the annual meeting the committee be discharged.

The President, in commenting on this report, called the attention of the Council to the action of the Executive Committee regarding it. The Executive Committee viewed with some concern the continuing complications in the present relations between the Society and the Veterans Administration and on that account recommended the omission of the part of the report calling for the discharge of the committee after the annual meeting. This recommendation was accepted, and the report as thus amended was accepted by vote of the Council.

Committee to Confer with the Massachusetts Farm Bureau Federation — Dr. Joseph C. Merriam, Middlesex South, *Chairman.*

The following report was offered by Dr. Merriam:

This report is informational. Through the chairman of this committee the headquarters of the Massachusetts Farm Bureau was notified that the committee had been appointed and was ready to meet with them to discuss any medical problems they may have and to help them in any way within its power.

The chairman was assured by the Farm Bureau that they had no medical problems but should any arise the committee would be notified.

Dr. Merriam moved the acceptance of this report. The motion was seconded, and it was so ordered by vote of the Council.

Committee to Survey Salaries — Dr. Charles J. Kickham, Norfolk, *Chairman.*

The following report was offered by Dr. Kickham:

This committee, which was ordered by the Council to consider a retirement plan, has met and after consideration has found that the problem is very complex. We have to give consideration to the age limits, the cost, the amount of compensation to be received at retirement and many other details.

The committee unanimously agreed that considerable time would be necessary before any decision could be made and that we should have one or more plans submitted to us by competent insurance companies to guide us in our study. It was felt that this would take months and consequently at this time we simply submit a report of progress.

Dr. Kickham moved the acceptance of this report. The motion was seconded, and it was so ordered by vote of the Council.

Committee to Aid the Regional OPA — Dr. Joseph Garland, Suffolk, *Chairman.*

The following report was offered by Dr. Garland.

This committee was appointed at the annual meeting of the Society in 1943 to advise the Regional Office of Price Administration on the medical aspects of food rationing. During the war years and so long as active rationing continued, its duties were considerable and their performance of some possible value to the war effort. For over a year the occasional rationing problems have been confined to the dispensing of sugar.

As of June 30, 1947, the Office of Price Administration goes out of existence and your committee, desiring not to outlive its usefulness by too long, requests that it also be discharged.

Dr. Garland moved the acceptance of this final report and the discharge of the committee. The motion was seconded, and it was so ordered by vote of the Council.

Report of the Committee to Meet with General Hawley — Dr. Humphrey L. McCarthy, Norfolk, *Chairman.*

This report (Appendix No. 5) was submitted as published in the circular of advance information. Dr. McCarthy, in presenting the report, explained the difficulties that had been encountered in attempting to co-operate with the Veterans Administration through a Blue Shield contract. These difficulties were based largely on the opposition of the American Legion and the Veterans of Foreign Wars to two bills filed by Blue Shield and Blue Cross which would allow these organizations to sign con-

tracts with a federal or local agency. As stated in the report of the Executive Committee (Appendix No. 3) these bills were reported three times unfavorably by the Insurance Committee of the Legislature, making it impossible to continue with the Blue Shield contract. Dr. McCarthy accordingly recommended a new type of program in which the Society would deal directly with the Veterans Administration under a gentleman's agreement, similar to the so-called "Kansas Plan."

To facilitate this change in policy the Executive Committee recommended three actions by the Council:

(1) To remove from the table, where it was placed by vote of the Council on October 2, 1946, the recommendation of the Executive Committee that the vote of the Council of April 10, 1946, in special meeting, be rescinded. (This vote adopted the plan of a contractual arrangement between the Veterans Administration and the Blue Cross–Blue Shield whereby the hospital expenses of veterans in civilian hospitals would be met by the Blue Cross as agent and whereby the costs of professional services of civilian physicians caring for veterans under the fee schedule would be met by the Blue Shield as agent.)

This was moved by Dr. McCarthy, the motion was seconded, and it was so ordered by vote of the Council.

(2) To rescind the vote of April 10, 1946.

This was moved by Dr. McCarthy, the motion was seconded, and it was so ordered by vote of the Council.

(3) To refer the whole matter back to the Committee to Meet with General Hawley for further negotiations along the lines of a gentlemen's agreement and report to the Council.

This was moved by Dr. McCarthy, the motion was seconded, and it was so ordered by vote of the Council.

Dr. McCarthy then moved the acceptance of the entire report. The motion was seconded, and it was so ordered by vote of the Council.

On motion from the floor, unanimously carried by the Council, Dr. McCarthy was given a vote of thanks for "the enormous amount of work that he has put into this program, is putting in and will probably continue to put in."

Committee on Postgraduate Instruction — Dr. W. Richard Ohler, Norfolk, *Chairman.*

This report (Appendix No. 6) was submitted as published in the circular of advance information. In presenting it, Dr. Ohler pointed out that it also included a report of the Bureau of Clinical Information.

The report contained one recommendation, that the program as carried on last year, which includes the Sanders Theater Exercises, be continued another year.

President O'Hara, in commenting on this recommendation, noted that the instruction sponsored by the committee, figured on the basis of the usual collegiate semester hours, amounted to a complete college course given for thirty or forty men, all in one year.

The recommendation was carried, after which the acceptance of the report as a whole was moved by Dr. Ohler. The motion was seconded, and it was so ordered by vote of the Council. Dr. O'Hara's expression of the Council's gratitude to Dr. Ohler was greeted with applause.

Joint Committees on Rehabilitation and Industrial Health — Drs. Daniel Lynch, Norfolk, and Joseph H. Shortell, Suffolk, *Chairmen.*

The following report was offered by Dr. Lynch:

On April 2, 1947, there was a joint meeting of the Committees of Industrial Health and Rehabilitation. Present for the Committee of Industrial Health were Drs. Daniel Lynch, chairman, Harold R. Kurth, Louis Daniels, and Thomas Shipman. Present for the Committee on Rehabilitation were Drs. Joseph Shortell, chairman, Ralph Chambers, James Regan, Arthur Watkins and members *ex officiis*, Drs. Dwight O'Hara and Edward P. Bagg. As guest advisers were Drs. Henry Marble, Alexander Aitken, director of the Liberty Mutual Rehabilitation Clinic, Mrs. Emma Tousant, member of the Industrial Accident Board, and Mr. Herbert Dallas, Division of Vocational Rehabilitation.

The whole field of rehabilitation was discussed and particularly Dr. Augustus Thorndike's request as to whether there is need for a community rehabilitation center and service in Boston. Dr. Thorndike was present and fully explained the proposed establishment of a rehabilitation clinic.

It was resolved that the joint Committee of Rehabilitation and Industrial Health agrees that there is a definite need for the establishment of a community rehabilitation center and service in Boston in accordance with the *Report of the Baruch Committee on Physical Medicine*, but that it should be established, maintained and controlled locally and not nationally, and that such a project is advisable.

Dr. Lynch moved the acceptance of the report.

President O'Hara then asked Dr. Augustus Thorndike, Suffolk, to discuss the report, since the consideration of a community rehabilitation center had resulted from a resolution presented by him at the February meeting of the Council.

Dr. Thorndike, in discussion, explained that what is planned by the Baruch Committee on Physical Medicine would not proceed without the approval of the Society, and would be a nonprofit organization with outpatient and consultation service for the physically handicapped, where doctors and hospitals could refer their patients for late convalescent care. Such a clinic would be available to all economic classes. At present, to the best of Dr. Thorndike's knowledge, the Liberty Mutual Rehabilitation Clinic is the only medically supervised center in New England.

Dr. Donald Munro, Suffolk, in emphasizing the point that the economic status of the patient was not a matter of consideration, explained that only through such a clinic could certain types of patient, such as those with paralysis from spinal injuries, receive proper care.

Drs. Lynch and Arthur L. Watkins, Middlesex South, spoke further in support of the establishment of such a center.

The motion to accept the report was seconded, and it was so ordered by vote of the Council.

Committee on Physical Medicine — Dr. Arthur L. Watkins, Middlesex South, *Chairman.*

The following report was offered by Dr. Watkins:

This committee has had no new work assigned to it, but would like to make an informational report on activities in physical medicine in this area. The Veterans Administration has established a far-reaching plan for medical rehabilitation in all its hospitals. This includes physical and occupational therapy, physical rehabilitation and shop and educational retraining, all under the direction of a specialist in physical medicine termed a physiatrist. This program aims to carry the patient through the convalescent or third stage of medical care and guide him toward suitable employment.

The plan for a New England rehabilitation center for civilian casualties of disease and injury recognizes a similar need for more complete medical care during convalescence, particularly employing physical medicine, including evaluation for employment capabilities.

The recent literature in physical medicine has again been reviewed and will appear in the *Journal* as a progress report entitled "Recent Trends in Physical Medicine."

Dr. Watkins moved the acceptance of the report. The motion was seconded, and it was so ordered by vote of the Council.

Dr. Paul R. Withington, Norfolk, having raised a question as to the formation of women's auxiliaries, Dr. O'Hara put to a vote the question of returning to the report of the Committee on Public Relations for further discussion. This was not carried.

Committee on Nominations — Dr. Ralph R. Stratton, Middlesex East, *Chairman.*

In the absence of Dr. Stratton, Dr. Allen G. Rice, Hampden, presented the following supplementary report of the committee:

A special meeting of the nominating councilors, called by President Dwight O'Hara, was held Wednesday, April 30, 1947, at 4:00 p.m. in the Prince Room, 8 Fenway, Boston.

The untimely death of the Secretary, Dr. Michael A. Tighe, and the withdrawal by Dr. Edmond F. Cody of his nomination for vice-president left these positions unfilled. At this special meeting the nominating councilors nominated for secretary Dr. Joseph Garland, Suffolk, and for vice-president Dr. Charles J. Kickham, Norfolk.

The slate of the nominating councilors is therefore amended to read as follows:

President-elect	Daniel B. Reardon
Vice-president	Charles J. Kickham
Secretary	Joseph Garland
Treasurer	Eliot Hubbard, Jr.
Assistant treasurer	Norman A. Welch
Orator	Allen S. Johnson

The President asked for nominations from the floor. There being none, Dr. Rice moved that the Secretary be instructed to cast one ballot for the list of officers as submitted by the Committee on Nominations. This motion was seconded, and it was so ordered by vote of the Council.

This vote having been cast, the President announced that the list of officers as read had been elected.

President O'Hara then introduced Dr. Edward P. Bagg, president of the Society for the 1947-1948 term of office, as follows:

Dr. Bagg, last year Dr. Fitz presented me with ten volumes of the proceedings of the Society, each one autographed by the president of that year, for ready reference of the president, and you will find those, sir, in the presidential desk at 8 Fenway. You will also find there an eleventh volume, which is the proceedings of the Society for 1946 and inscribed by Dr. Fitz, to carry on the tradition that he commenced.

I have at this time the honor to present to you, which Dr. Fitz presented to me, the presidential copy of *Robert's Rules of Order* and the keys to the Society. They will let you in at 8 Fenway, where you may wander at will. We welcome you into your presidency, sir.

Dr. Bagg made the following reply:

Dr. O'Hara, I thank you for these donations, which are much needed. I don't know about the keys, but *Robert's Rules* will have to be my constant companion, I can see. If we can only emulate the example that has been set us this year with a modicum of success, I shall be satisfied. That is not a mere chance remark, either. As you know, Dr. O'Hara has put a great deal of time and thought into these meetings, and one of the reasons they have moved along so successfully is that he knew the agenda and he knew what the Executive Committee had discussed.

It has been a privilege this past year to sit in with these committees and see them function and to learn the personalities involved, and I feel better prepared tonight than I did a year ago. But I know I shall need all your assistance.

We shall miss Dr. Tighe greatly. As Dr. O'Hara has told you, there are very few members who have had such a warm interest in the affairs of the Society.

I think this might be the proper occasion to tell you about a rather dramatic episode. Dr. O'Hara and I had talked things over after Dr. Tighe's first attack, and we had decided that it was too much for him to undertake the secretaryship and private practice. So I wrote him a letter asking him if he would care to have me bring in a resolution suggesting that the secretaryship should be made full time, because we felt that he should not jeopardize his health with general practice. I wish you could have seen the expression on his face as he sat there. He was delighted beyond words and overcome with the suggestion and said he would go home and think it over. I had a letter from him several days later stating that after prolonged thought, for it was not an easy decision, he had decided to accept if the Society felt that they wanted him for full-time service. And then of course he ended, "And I am delighted to say that I am sound again and ready for work." But five days later he was called to other fields. It is at least, however, a great satisfaction to me to think that he had that one joyous experience. The question whether the position should be made full time can wait and need not be discussed this evening, but at least I do not regret having written that letter. We shall go into that some time at length.

But once more, gentlemen, let me thank you for the honor. I will do my best to live up to the privileges as well as the responsibilities.

Dr. Daniel B. Reardon, Norfolk South, president-elect, was then escorted to the platform and introduced to the Council. Dr. Reardon addressed the Council as follows:

I wish to thank each and every one of you individually for having elected me to the office of president-elect. I shall now take Dr. Bagg's position as a sitter for the next year, and I expect to gain considerable profit in occupying that position.

I am thoroughly familiar with many of the committees because I have served on a good many of them, so some of their work will not be new to me. I accept this offer with a keen appreciation of the responsibility which it holds. I do it with a sense of deep humility. My earnest endeavor shall be to serve you and to serve the Society as well as possible and at all times to maintain the dignity and honor of that office. Thank you.

After the introduction of the remainder of the slate of officers elected, the President called for new business to come before the Council, as the president-elect was not at the moment prepared to submit his list of committee appointments.

New Business

Dr. Merrill C. Sosman, Suffolk, rose to present a joint resolution by the roentgenologists, pathologists and anesthetists of Massachusetts. As a preliminary explanation he reminded the Council that the Blue Cross had just sold a comprehensive, all-inclusive contract at a per-diem rate, and he stated that the three groups mentioned had objected to it on three principles: first, that it includes medical services as hospital care; second, that it puts the hospital in the bad situation of "holding the bag" with an unpredictable amount of insurance, as Blue Cross has guaranteed to cover all x-ray charges regardless of cost, but pays for them only on a per-diem rate; and third, that it puts control of the professional services more into lay hands than it has been before.

Dr. Sosman then presented the following resolutions:

Whereas, Massachusetts Hospital Service agreements which affect the professional status of pathologists, radiologists, and anesthesiologists have been offered to the public and hospitals without consultation with representatives of the organizations of these specialists in Massachusetts; and

Whereas, Radiology (sometimes referred to as roentgenology or x-ray examination, diagnosis or treatment), pathology (sometimes referred to as laboratory examination or diagnosis) and anesthesiology constitute the practice of medicine and are medical services; and

Whereas, The House of Delegates of the American Medical Association on June 8, 1943, recommended:

That the House emphatically reiterate that it disapproves the injecting of a third party into the personal relationship of the patient and the physician, and that hospitals should not be permitted to practice medicine.

That the practice of radiology, pathology and anesthesiology is the practice of medicine just as much as is the practice of surgery or internal medicine, and that it is only a short step from including the first three in a medical service plan to including the whole field of medicine in such a plan; and

Whereas, We are heartily in accord with the basic principle of insurance against the cost of sickness and hospitalization by voluntary prepaid plans, in accordance with the principles adopted by the Massachusetts Medical Society; and

Whereas, The proposed over-all comprehensive Massachusetts Hospital Service agreement on a per diem basis of compensation fails to distinguish between hospital services and professional medical services, such as pathology, x-ray and anesthesia; and

Whereas, The proposed Massachusetts Hospital Service agreement on a per diem basis submerges completely the professional standing of the services of the pathologist, radiologist and anesthesiologist and relegates them to a hospital service similar to room, board and drugs; and

Whereas, The introduction of the proposed per diem plan, which includes professional services, will undoubtedly lead to an unpredictable increased volume of work, especially in radiology, and could result in control of professional services by hospital administrators, thus lowering the quality of the work with the inevitable danger to the public welfare; and

Whereas, At the present time there is a shortage of well trained pathologists, radiologists and anesthesiologists in this country and whereas an important factor in this shortage is the tendency for hospitals to minimize the professional standing of these specialists and thus not attract the best class of physicians to these specialties; and furthermore, a per diem basis of payment will certainly increase this trend so that these specialties may lose their standing as professional specialties; therefore be it

Resolved, That the New England Pathological Society, the New England Roentgen Ray Society, the Section of Radiology of the Massachusetts Medical Society, the New England Society of Anesthesiologists and the Section of Anesthesiology of the Massachusetts Medical Society oppose any arrangement by any hospital with the Massachusetts Hospital Service that will allow this organization to guide or determine professional services; and furthermore be it

Resolved, That the New England Pathological Society, the New England Roentgen Ray Society, the Section of Radiology of the Massachusetts Medical Society, the New England Society of Anesthesiologists and the Section of Anesthesiology of the Massachusetts Medical Society oppose the principle of the over-all comprehensive Massachusetts Hospital Service Agreement on a per diem basis of compensation because it fails to distinguish between hospital services and professional medical services, such as pathology, x-ray, and anesthesia; and furthermore be it

Resolved, That they recommend that charges for all professional services performed by physicians should be specifically excluded from all hospital service plans.

The New England Pathological Society, the New England Roentgen Ray Society, the Section of Radiology of the Massachusetts Medical Society, the New England Society of Anesthesiologists, and the Section of Anesthesiology of the Massachusetts Medical Society recommend

That the logical organization to write insurance against professional charges is the Blue Shield rather than the Blue Cross and that these two organizations attempt to work out a method of collaboration to cover these items.

That since contracts, including professional services, have been sold, it is proposed as an interim arrangement that charges for these professional services be billed directly by the hospital to Blue Cross and per diem rates be appropriately reduced by quota to compensate for this amount.

Since this contract was to go into effect on June 1, Dr. Sosman moved that Rule 1 of the Council, requiring all new business offered at Council meetings to be referred to a committee, be suspended, as provided for by Rule 3. The motion was seconded.

President O'Hara referred the resolution to the Committee on Public Relations, because that committee already had a subcommittee working on the anesthetists' aspect of the problem. He then called for discussion of the motion to suspend the Council rule. After considerable discussion by Drs. Bagnall, Sosman and Schadt, the motion was passed.

Dr. Sosman then moved that the Council approve the resolutions presented by the New England Pathological Society, the New England Roentgenological Society, the Section of Radiology of the Massachusetts Medical Society, the Section of

Roentgenology of the Massachusetts Medical Society, the New England Society of Anesthetists, and the Section of Anesthesiology of the Massachusetts Medical Society. The motion was seconded, and the Council voted to approve the resolutions.

Dr. Bagnall then moved that this whole matter be re-referred to a subcommittee of the Committee on Public Relations to be appointed by the President for a thorough study and report to the Council. The motion was put to vote and failed to be approved by the Council.

Dr. Charles J. Kickham, Norfolk, newly elected vice-president, having returned to the meeting, was introduced to the Council by the President and addressed the Council as follows:

> I apologize for being out of the room when I understand that I was called to be presented before you. While I had only been vice-president of the Society at that time a matter of about five minutes, I had already learned definitely (which I knew before) that I was a subordinate because Dr. Bagg had requested that I leave the room and talk with him for a few minutes, which I did.
>
> I appreciate the honor of being vice-president of the Society, not only personally, but because I know that I represent here as vice-president the Norfolk District Medical Society, which I have always been associated with and of which I am deeply fond. I trust that if there is anything I can do as vice-president to be helpful to Dr. Bagg, he will request it. As I said a moment ago, I appreciate the honor, but also I assure you I realize its limitations. Thank you.

The President called on Dr. John E. Moran, Franklin, to report for a committee consisting of Drs. Moran, Henry A. Tadgell, Hampshire, and Joseph Garland, Suffolk, appointed to draw up a resolution for presentation to the Council, stating the problem of sex criminality in Massachusetts and the need for its study.

Dr. Moran presented the following resolution:

> WHEREAS, This committee has been appointed by the president of the Society to draw up a resolution for presentation to the Council relative to "sexual psychopaths" and the problem of sexual psychopathy within the Commonwealth, and
>
> WHEREAS, We as a committee recognize sexual psychopathy to be a condition wherein there is basically a constitutional personality defect frequently manifest by overt acts of a vicious nature against society, and
>
> WHEREAS, We are of the opinion that the problem is not exclusively medical but is in large measure sociologic and penologic, therefore be it
>
> RESOLVED, That the Massachusetts Medical Society take cognizance of the problem of sexual psychopathy and indicate its desire to co-operate, in any reasonable manner, in a study of the matter, and be it further
>
> Resolved that a copy of this resolution be sent to the Recess Commission appointed to study the question of sexual psychopaths.

President O'Hara referred the resolution to the Committee on Mental Health, a subcommittee of the Committee on Public Health.

Dr. Curtis C. Tripp, Bristol South, presented the following letter from Dr. David L. Belding, Norfolk South, to the President:

> The shortage of nurses has become one of the most pressing problems of present-day medicine. It is of vital importance to hospitals and private physicians. As such it would seem to be the responsibility of the Massachusetts Medical Society to make a thorough study of this critical situation in order to formulate possible plans for its solution.
>
> I am therefore asking you to present this matter to the Council, under "New Business" in order that, if the Council so decides, it may be referred for study to the appropriate committee.

Dr. Tripp moved that this matter be referred to a committee by the President. The motion was seconded and carried, and the matter contained in Dr. Belding's letter was referred to the Committee on Medical Education and Diplomas.

Dr. Reginald Fitz, Suffolk, was recognized and moved that the President be authorized to appoint a committee to study the problems suggested by the resolution presented by Dr. Sosman and report back to the Council. The motion was seconded.

Dr. Sosman offered as a substitute motion that the President appoint a special committee, to include representatives of the Blue Cross, the Blue Shield, the Massachusetts Hospital Association, the Massachusetts, Medical Society, the radiologists, the pathologists, the anesthesiologists and any other specialty groups concerned to define hospital services and medical services and to establish the proper relations between physicians and hospitals.

Dr. Fitz having accepted this substitute motion, it was put to vote and was so ordered by vote of the Council.

COMMITTEE APPOINTMENTS

The President-Elect submitted a list of nominations to committees for the year 1947–1948. It was moved and seconded that the nominations be confirmed, and it was so ordered by vote of the Council.

There being no further business before the Council, the President declared the meeting adjourned at 10:30 p.m.

JOSEPH GARLAND, *Secretary*

APPENDIX NO. 1

ATTENDANCE OF COUNCILORS

BARNSTABLE
P. P. Henson

BERKSHIRE
I. S. F. Dodd
P. J. Sullivan

BRISTOL NORTH
M. E. Johnson
W. J. Morse
W. M. Stobbs

BRISTOL SOUTH
R. B. Butler
E. D. Gardner
R. H. Goodwin
William Mason
C. C. Tripp
Henry Wardle

ESSEX NORTH
E. S. Bagnall
R. V. Baketel
R. E. Blais
G. J. Connor
Elizabeth Councilman
N. F. DeCesare
H. R. Kurth
P. J. Look
R. C. Norris
G. L. Richardson
F. W. Snow

ESSEX SOUTH
D. S. Clark
R. E. Foss
Loring Grimes
C. A. Herrick
P. P. Johnson
O. S. Pettingill
E. D. Reynolds
J. R. Shaughnessey
H. D. Stebbins
P. E. Tivnan
C. F. Twomey
C. A. Worthen

FRANKLIN
J. E. Moran

HAMPDEN
F. H. Allen
E. P. Bagg
W. A. R. Chapin
A. J. Douglas
E. C. Dubois
F. S. Hopkins
A. G. Rice
G. L. Schadt
J. A. Seaman
G. L. Steele

HAMPSHIRE
L. B. Pond

MIDDLESEX EAST
Robert Dutton
R. W. Layton
K. L. Maclachlan
R. R. Stratton

MIDDLESEX NORTH
A. R. Gardner
W. F. Ryan
W. L. Twarog

MIDDLESEX SOUTH
J. M. Baty
W. O. Blanchard
G. F. H. Bowers
Madelaine R. Brown
R. W. Buck
E. J. Butler
J. F. Casey
C. W. Clark
C. L. Derick
J. G. Downing
C. W. Finnerty
H. Q. Gallupe
H. G. Giddings
H. W. Godfrey
J. L. Golden
A. D. Guthrie
Eliot Hubbard, Jr.
F. R. Jouett
E. E. Kattwinkel
A. A. Levi
A. N. Makechnie
R. A. McCarty
J. C. Merriam
Dudley Merrill
C. E. Mongan
J. P. Nelligan
Dwight O'Hara
Fabyan Packard
L. S. Pilcher
Max Ritvo
E. H. Robbins
M. J. Schlesinger
H. P. Stevens
A. B. Toppan
C. F. Walcott
A. L. Watkins
Hovhannes Zovickian

NORFOLK
B. E. Barton
Carl Bearse
G. L. Doherty
Albert Ehrenfried
Susannah Friedman
D. L. Halbersleben
J. B. Hall
H. B. Harris
R. J. Heffernan
P. J. Jakmauh
I. R. Jankelson
C. J. E. Kickham
D. L. Lionberger
D. S. Luce
C. M. Lydon
H. L. McCarthy
R. T. Monroe
Hyman Morrison
D. J. Mullane
W. R. Ohler
G. W. Papen
H. C. Petterson
H. A. Rice
S. A. Robbins
D. D. Scannell
S. L. Skvirsky
J. W. Spellman
A. R. Stagg
N. A. Welch
P. R. Withington
E. T. Wyman

NORFOLK SOUTH
F. A. Bartlett
Harry Braverman
D. L. Belding
W. R. Helfrich
E. K. Jenkins
N. R. Pillsbury
D. B. Reardon
H. A. Robinson
R. G. Vinal

PLYMOUTH
J. C. Angley
A. L. Duncombe
P. H. Leavitt
C. D. McCann
G. A. Moore

SUFFOLK
H. L. Albright
A. W. Allen
W. H. Blanchard
W. J. Brickley
W. E. Browne
A. M. Butler
A. J. A. Campbell
J. F. Conlin
Reginald Fitz
Joseph Garland
John Homans
L. M. Hurxthal
C. S. Keefer
H. A. Kelly
T. H. Lanman
C. C. Lund
Donald Munro
R. N. Nye
F. R. Ober
F. W. O'Brien
J. P. O'Hare
L. E. Parkins
L. E. Phaneuf
Helen S. Pittman
W. H. Robey
H. F. Root
R. M. Smith
M. C. Sosman
Augustus Thorndike
S. N. Vose
Conrad Wesselhoeft

WORCESTER
A. W. Atwood
George Ballantyne
F. P. Bousquet
E. J. Crane
G. R. Dunlop
W. J. Elliott
J. M. Fallon
L. M. Felton
Thomas Hunter
H. L. Kirkendall
J. A. Lundy
D. K. McClusky
J. M. Olson
F. A. O'Toole
R. S. Perkins
E. L. Richmond
R. F. Sullivan
J. J. Tegelberg
G. C. Tully
R. J. Ward

WORCESTER NORTH
J. J. Curley
J. V. McHugh

APPENDIX NO. 2

TREASURER'S REPORT

Return of members from the armed forces has been reflected in the increased income from dues during 1946 to $51,752 from $39,325 in 1945. Nonresident dues rose from $1500 to $1776. Income from the *New England Journal of Medicine* was $9000 this year as compared with $22,800 last year due to the mounting costs of publication. Income from censors' fees rose from $474 to $1242, an indication that more new applicants are seeking membership in the Society. The Committee on Arrangements turned in an excess of income over expenses from the annual meeting of $5268, and the New England Postgraduate Assembly a similar excess of $823.

The Endowment Fund's income rose from $498 to $503, and the General Fund's from $4527 to $5162 but the Building Fund's dropped from $2156 to $1989. This can be attributed to the call of certain securities bearing a higher rate, or to their sale, in anticipation of call, to realize a better market price, and to the sale of a few long-term bonds to reinvest in convertible bonds of lower interest rate with an eye toward greater possibilities of profit in the future through their conversion features. However, in the Building Fund, profit on sale of securities rose to $591 in 1946 from $173 in 1945, and profit from sales in the General Fund rose from $991 to $1898. The amount received from subscriptions to the *New England Journal of Medicine* from men in service fell from $1312 to $622; this total was paid over to the *Journal*.

Changes in the holdings of the General Fund resulted from the sale at profit of a number of separate bond issues of small denominations and reinvestment in larger unit holdings of two new bond offerings, both convertible into common stock — Dewey & Almy Co. 2⅞'s due 1976, and American Telephone and Telegraph Co. 2¾'s due 1961. The following preferred stock shares were purchased during the year — 50 shares U. S. Steel Co. 7 per cent cumulative, 100 shares Atlantic Refining Co. 4 per cent cumulative and 90 shares Monsanto Chemical Co. 3¼ per cent cumulative convertible.

The General Fund securities now represent a book value of $179,094, as compared with $142,689 in 1945.

The Building Fund securities stand at a book value of $69,665, as compared with $68,027 in 1945.

The Endowment Fund securities remain at the same book value as last year, $23,166.

In summary, total revenue in 1946 was $78,072 and total expenses $52,046, leaving an excess of revenue over expenses of $26,026.

Total Building Fund assets amount to $73,117, an increase over last year of $2580.

General Fund assets amount to $238,152, an increase of $26,953 over last year.

The Society ends 1946 with a grand total of assets in cash and securities of $334,436, an increase of $29,533 over 1945.

A breakdown of comparative expenses in 1945 and 1946 is appended. It is obvious that there has been a steady increase from $33,133 in 1943 to $52,046 in 1946 and a budget of $64,195 for 1947. Plans are being considered which may well raise the annual expense figure for 1948 to over $100,000. This makes an increase in the dues imperative.

It is hoped that with an increase in dues the Society will consider a larger refund to the district societies annually, and also that, under guidance of the Committee on Finance, the Society may consider pegging the total assets of the General Fund at a certain maximum figure and that, in any given year, after all expenses have been paid, any income raising the General Fund above this figure be automatically diverted into the Building Fund. There is little to be gained by

indefinitely enlarging the General Fund, whereas the Building Fund stands not only for a potential much needed headquarters, but once the property has been acquired, stands back of it as an endowment, the income from which can be used to support the running of the establishment.

The year 1946 marks the ending of a long era of pleasant association between the Treasurer's Office and the staff of the *New England Journal of Medicine*. Now that the Society has developed its own clerical staff, the Treasurer would like to emphasize his appreciation for all past kindnesses and help given him by the *Journal* personnel.

Comparative Expenses, 1945 and 1946

	1945	1946
Salary:		
Secretary	$3,000.00	$3,500.00
Executive Secretary	4,000.00	4,400.00
Treasurer	2,000.00	2,250.00
Expenses:		
President	608.77	154.39
Secretary	3,189.87	4,594.36
Treasurer	1,968.74	2,516.33
Delegates to A.M.A.	818.86	3,380.01
Maintenance of Society Headquarters	3,746.33	4,078.63
Cotting luncheons	504.20	543.20
Refund to district societies	4,000.00	4,000.00
New England Council	100.00	100.00
Clerical	0	1,405.00
General administrative	2,509.80	4,701.22
N.E.J.M. for subscriptions to *Journal* from fellows in service	1,312.00	622.00
Shattuck Lecture	0	200.00
Committees:		
Arrangements	272.15	0 (profit)
To Appoint a Director of Education and Information	0	14.55
Ethics and Discipline	143.20	147.41
Executive	287.74	246.80
Fee Schedule	0.	689.48
Finance	20.23	3.00
Industrial Health	92.87	79.93
Legislation	3,580.02	3,841.73
Massachusetts Hospital Association	.08	5.66
Maternal Welfare	3.16	0
Medical Defense	571.67	1,167.75
Membership	125.70	225.07
Military Postgraduate	607.63	.52
Postwar Loan Fund	466.44	313.33
Postwar Planning		
General and sub-committees	2,440.84	4,084.04
Information Bureau	2,042.48	3,403.79
Postpayment Medical Care	8.66	0
Public Health	82.36	108.67
Public Relations	1,295.05	636.49
Publications (*Directory*)	1,709.00	3.12
Rehabilitation	44.10	0
Rules	4.51	0
To Study Malpractice Insurance	0	607.23
Tax-Supported Medical Care	47.21	22.53
War Participation	34.29	0
	$42,537.96	$52,046.24

* * *

Expenses	1943	$33,133.02
	1944	38,544.33
Budget	1947	64,195.00

APPENDIX NO. 3

Report of the Executive Committee

The Executive Committee of the Council met on April 23, 1947, in Sprague Hall, 8 Fenway, Boston, the meeting being called to order at 4:15 p.m. Dr. Dwight O'Hara, president of the Society, was in the chair.

Dr. O'Hara spoke feelingly of the loss of Dr. Tighe, secretary of the Society, on April 8, and asked those present to stand for a moment in silent tribute.

The record of the last meeting as submitted by the Secretary was then approved.

Committee Reports

Committee on Membership

This report, which had been circulated in mimeographed form, under date of March 19, was acted on by sections and accepted by unanimous vote.

Committee on Nominations

Dr. O'Hara, referring again to the death of Dr. Tighe, announced that he had appointed Dr. Joseph Garland to fill Dr. Tighe's unexpired term and had asked the Committee on Nominations to meet again on April 30 to propose names for secretary and vice-president, Dr. Edmond F. Cody having declined the latter nomination.

Treasurer's Report and Report of the Auditing Committee

Dr. Eliot Hubbard, Jr., treasurer, called attention to an error. The sentence reading "Total Building Fund assets amount to $73,177, an increase over last year of $2640," should read "— an increase over last year of $2580." The Executive Committee recommends the adoption of this report as corrected, including the report of the Auditing Committee.

Committee on Ethics and Discipline

This report, for information only, is recommended for adoption by the Council. The Executive Committee commends the circular prepared under the auspices of the supervising censors for the instruction of candidates.

Committee on Public Relations

This report is divided into three items, the first two of which contain recommendations.

The first, a report of the Subcommittee on Insurance Relations, was accepted by the Committee on Public Relations, which recommended its acceptance by the Council, and the discharge of the subcommittee. The Executive Committee recommends the acceptance and approval of this report by the Council.

The second item concerns the establishment of a women's auxiliary to the Massachusetts Medical Society by the districts, at their pleasure, with the Committee on Public Relations aiding in the organization of these said units. The Executive Committee recommends that the Council accept this recommendation.

The third item concerns (*a*) the establishment of a Speaker's Bureau and (*b*) a discussion that took place at a meeting of the Essex North District Medical Society with reference to the payment of anesthetist's fees by the Blue Cross.

The Executive Committee recommends that the report as a whole be accepted by the Council.

Committee on Veterans' Affairs

In view of the continuing complications in the present relations between the Society and the Veterans Administration, the Executive Committee recommends the omission of the lines in this report calling for the discharge of the committee after the annual meeting.

Committee to Meet with General Hawley

It has become recently apparent that the method of cooperating with the Veterans Administration through a Blue Shield contract has been blocked, as the Massachusetts Medical Service does not deem it wise to handle this type of contract under existing conditions. As noted in the committee report, bills (H. 950 and 137) filed by Massachusetts Medical Service and Blue Cross have been opposed by the American Legion and the Veterans of Foreign Wars, and reported three times unfavorably by the Insurance Committee.

The chairman of the Committee to Meet with General Hawley, Dr. Humphrey L. McCarthy, therefore recommends that the Massachusetts Medical Society deal directly with the Veterans Administration under a gentleman's agreement, similar to the Kansas Plan, rather than with a formal contract. To re-open this matter, three motions are necessary:

(1) To remove from the table, where it was placed by vote of the Council on October 2, 1946, the recommendation of the Executive Committee that the vote of the Council of April 10, 1946, in special meeting, be rescinded. (This vote adopted the plan of a contractual arrangement between the Veterans Administration and the Blue Cross-Blue Shield, whereby the hospital expenses of veterans in civilian hospitals would be met by the Blue Cross as agent and whereby the costs of professional services of civilian physicians caring for veterans under the fee schedule would be met by the Blue Shield as agent.)

(2) To rescind the vote of April 10, 1946.

(3) To refer the whole matter back to the Committee to Meet with General Hawley for further negotiations along the lines of a gentleman's agreement, and report to the Council.

The Executive Committee recommends to the Council the adoption of these three motions.

Committee on Postgraduate Instruction

The Executive Committee calls special attention to the great service that this committee has rendered and recommends that its work be enthusiastically endorsed.

Joint Report of Committees on Rehabilitation and Industrial Health

The recommendation of these committees reads as follows: It was resolved that the joint Committee of Rehabilitation and Industrial Health agrees that there is a definite need for establishment of a community rehabilitation center and service in Boston in accordance with the *Report of the Baruch Committee on Physical Medicine* but that it should be established, maintained and controlled locally and not nationally, and that such a project is advisable.

The Executive Committee recognizes the desirability of such a rehabilitation center and recommends the acceptance of the committee report, with the suggestion that it be discussed before the Council by some authoritative individual.

Other Business

On motion of Dr. John E. Moran, Franklin, President O'Hara appointed a committee consisting of Drs. Moran, Henry A. Tadgell, Hampshire, and Joseph Garland, Suffolk, to draw up a resolution for presentation to the Council, stating the problem of sex criminality in Massachusetts and the need for its study.

On motion by Dr. Kickham, the Executive Committee tendered to Dr. O'Hara a vote of thanks for the wisdom and celerity with which he had conducted its meetings during the past year.

The Executive Committee adjourned at 5:45 p.m.

Joseph Garland
Secretary pro tempore

APPENDIX NO. 4

Report of the Committee on Publications

The Committee on Publications wishes at this time to report upon its supervision of the publication of the *New England Journal of Medicine* for the year 1946. We quote from the report of the managing editor, Dr. Robert N. Nye, to the committee:

During the year 1946 the *New England Journal of Medicine* continued to expand, and the new regular and student subscriptions and the net gain in circulation were larger than ever before, the respective figures being 6783 and 3296, as compared with 5913 and 3203 in 1945. Since there were 4729 new regular subscribers and 823 transfers from "student" to "regular" but a net gain of only 2308, this means that the subscriptions of 3244 were canceled during the year. The loss of approximately 1000 of these subscribers is accounted for by canceled subscriptions from the Army and Navy, but that of the balance remains unexplained. Incidentally, the gain from the discharge of members of the Society from the armed forces about balanced the loss of Army and Navy subscriptions. As of December 26, 1946, *Journals* were being sent to 5380 members of the Society, 12,074 regular subscribers (including some members of the New Hampshire Medical Society), 3302 medical students, 345 members of the New Hampshire Medical Society (monthly) and 283 miscellaneous readers — a total of 21,384 copies, as compared with 18,088 at the end of 1945.

Publication costs were markedly increased during 1946; thus, whereas the total cost, which includes printing, binding, mailing and paper stock, was about $76,500 in 1945, it increased to $120,500 in 1946. Fortunately, the revenue from advertising increased from $73,900, to $93,300 and that from subscriptions from $66,300 to $84,800 almost covered the greater publication cost, with the result that the *Journal* was able to pay to the Treasurer on December 31, 1946, the sum of $9000, as compared with $22,800 at the end of 1945. Since no money was advanced to the *Journal* by the Treasurer during 1946, this represents a clear profit. The actual profit was $11,300, the balance being represented by an increase in surplus from $15,800 to $18,100.

During 1946, the editorial board considered 292 manuscripts, of which 201, or 69 per cent, were accepted. The corresponding figures in 1945 were 203 and 129.

Book paper is still scarce and of poor quality; in fact, it is scarcer and of poorer quality than at any time during the war. In spite of the shortage, however, the number of text pages in 1946 was 1,834, compared with 1,508 in 1945. The reproduction of cuts has left much to be desired, but nothing can be done about it until a higher grade of paper is available. The majority of roentgenograms should be printed on coated stock, but this cannot be obtained. It is hoped that the paper situation will have improved by the end of the current year.

Although copies of the *Journal* are usually delivered to this office on the day following the date of publication, binding and mailing result in a delay of six or seven days before copies are received by members of the Society. This is unfortunate but practically unavoidable. In due course, it may be possible to cut the period to three or four days. The delay in the delivery of reprints is not so long as it was in 1945 but is still much longer than it should be; possibly this can be corrected.

The decision of the Massachusetts Medical Society to employ its own stenographers has relieved the office staff of much work that interfered with an orderly routine. Furthermore, this has resulted in more office space for the work of the *Journal*. This increased space will suffice for a year or so, but even now half again as much space is really needed. Telephone calls for the Society are still handled by the office staff, and since these comprise more than half the incoming calls, it seems only reasonable that, with an office force of its own, the Society should have a separate switchboard.

Robert O'Leary has returned to his former position as one of the assistant editors after three and a half years in the Army. The relief of the managing editor is unbounded! Miss Davies and her staff have continued to handle the affairs of the *Journal* in a manner that is irreproachable.

The outlook for 1947 appears reasonably good. An abundance of manuscripts seems assured, which permits the editorial board to exercise even higher standards of acceptance. An increase of circulation is anticipated, particularly student subscriptions, inasmuch as a student representative of the *Journal* has been appointed in nearly all approved medical schools. A survey is now underway to determine, if possible, why a certain number of regular readers fail to renew their subscriptions. The cost of publication will be higher, since the charges for printing, binding and mailing are to be increased 15 per cent on April 1 and the rates for paper have risen following the removal of ceiling prices. Advertising rates were increased on July 1, 1946, and on January 1, 1947, but since it is customary to permit all regular advertisers to continue for a year at former rates, the full effect of these increases will not be realized until after January 1, 1948.

An abstract of the auditors' reports is appended. The full report, signed by the auditors, Hartshorn and Walter, is in the hands of the treasurer of the Society.

The Committee again records its deep appreciation of the services of Dr. Nye. His management of the *Journal* has given to the Society a publication of which it may justly be proud.

Oliver Cope
John Fallon
James P. O'Hare
Conrad Wesselhoeft
Richard M. Smith, *Chairman*

Abstract of Auditor's Reports

	1944	1945	1946
Current assets:			
Cash	$6,148.53	$6,176.73	$6,442.47
Accounts receivable	7,166.12	9,153.56	10,721.93
Capital assets	1,213.64	1,146.35	1,538.13
Totals	$14,528.29	$16,476.64	$18,702.53
Current liabilities	402.50	605.10	553.28
Surplus	$14,125.79	$15,871.54	$18,149.25
Expenses:			
Publication of *Journal*	$67,609.73	$76,417.78	$120,531.42
Publication of reprints	6,123.72	5,150.81	9,561.29
Office and other salaries	25,480.17	30,488.22	35,408.72
Commission, fees, etc.	5,478.47	7,893.93	8,756.49
Office and sundry expense	5,009.32	5,130.61	6,069.94
Totals	$10),701.41	$125,031.35	$180,327.86
Revenue:			
Advertising	$38,271.40	$73,852.44	$93,345.21
Engraving	1,042.61	974.10	545.62
Reprints	4,389.43	6,194.49	9,712.16
Subscriptions (other than M.M.S.)	55,978.15	66,278.18	84,792.33
Miscellaneous	2,033.06	2,327.89	3,210.25
Totals	$101,764.65	$149,627.10	$191,605.57
Net loss or profit to M.M.S.	$7,936.76 (loss)	$24,545.75 (profit)	$11,277.71 (profit)
Net publishing cost: expenses minus (revenue minus subscriptions)	$63,914.91	$41,732.43	$73,513.62
Average paid circulation	13,447	16,264	19,282
Net cost per subscriber	$4.75	$2.50	$3.81
Net cost per member M.M.S. (based on net loss)	1.81	....	....

APPENDIX NO. 5

Report of the Committee to Meet with General Hawley

Last December, Part I of the fee schedule for medical services to the Veterans Administration was accepted and turned over to the Massachusetts Medical Service and signed as a contract. Since that time many things have happened.

1. In the original plan, the procedure was to be as follows:
The veteran requests treatment from the Veterans Administration in person or by letter, phone or telegram.
If the Veterans Administration has no facilities available or if it would cause undue hardship for the veteran to report to a Veterans Administration facility, an authorization is sent to the Massachusetts Medical Service.
The Massachusetts Medical Service issues a letter of eligibility to the veteran showing the number and type of treatments authorized.
The veteran presents the letter of eligibility to any participating doctor.
The doctor treats the veteran.
At the end of month the doctor completes the treatment report and forwards a portion of the letter of eligibility to the Massachusetts Medical Service.
The Massachusetts Medical Service pays the doctor if in order, and forwards the report of treatment to the Veterans Administration.
At the end of month the Massachusetts Medical Service bills the Veterans Administration on a master voucher.

2. During the first part of December, 1946, approximately 6000 registration forms were sent to physicians in Massachusetts asking whether they desired to participate in the plan and whether or not their practice was chiefly concerned with a specialty. An analysis of the registration is as follows:

Classification	Certified*	In Process	Total
Allergy	8	3	11
Anesthesia	31	11	42
Cardiology	6	0	6
Dermatology and syphilology	33	5	38
Diabetes	4	0	4
Diseases of chest	12	2	14
Gastroenterology	5	3	8
General practice	1423	43	1466
Gynecology	8	0	8
Gynecology and obstetrics	62	10	72
Internal medicine	186	24	210
Internal medicine (allergy)	5	2	7
Internal medicine (arthritis)	4	1	5
Internal medicine (cardiology)	39	4	43
Internal medicine (diabetes)	4	0	4
Internal medicine (diseases of chest)	9	1	10
Internal medicine (endocrinology)	4	0	4
Internal medicine (gastroenterology)	12	1	13
Internal medicine (hematology)	5	0	5
Neurology	4	0	4
Neurology and psychiatry	40	12	52
Neurosurgery	8	4	12
Obstetrics	8	1	9
Ophthalmology	66	5	71
Ophthalmology and otolaryngology	69	8	77
Orthopedic surgery	50	9	59
Otolaryngology	64	7	71
Pathology	10	3	13
Pediatrics	40	4	44
Physical medicine	4	0	4
Physiotherapy (general practice)	2	0	2
Proctology	11	0	11
Psychiatry	12	1	13
Radiology	26	5	31
Roentgenology	29	4	33
Surgery, general	247	32	279
Surgery, general (gynecology)	10	1	11
Surgery, general (obstetrics)	9	0	9
Surgery, general (proctology)	8	1	9
Surgery, general (thoracic)	7	0	7
Urology	56	7	63
	2640	214	2854
Hospital administrators			4
Public-health physicians			1
Nonresident physicians			40
Physicians refusing to participate			205
			3104
		Duplication	4
			3100

*Certified as a specialist only for the purpose of the Veterans Administration.

3. On March 13, 1947, a letter from the Veterans Administration requested the Massachusetts Medical Society to assist the Veterans Administration in establishing for examination and treatment a list of specialists who meet the qualifications for specialists of the Veterans Administration. These qualifications were entirely new, and for those not possessing specialty-board certificates, the letter stated that the following data should be given:
The number of years of experience in a given specialty (including recognized residencies),
The percentage of practice devoted to a given specialty and whether the physician was recognized as a practicing specialist by the Society.

4. Within the past month, Massachusetts Medical Service has filed a bill (H. 950), with a companion bill (H. 137) under the name of Blue Cross, to give the combined agencies the privilege to sign contracts. Both these bills have been opposed by the American Legion and the Veterans of Foreign Wars, and reported three times unfavorably by the Committee of Insurance. Many conferences have been held with Blue Shield, the Veterans Administration and the veterans' organizations, as well as your committee, and the bill was rewritten (H. 950) and has been agreed on by these various organizations and is now being considered in the House.

The outcome of this bill is not known, but the committee hopes that some pertinent information will be at hand in time for the Executive Committee. If Blue Shield is not granted this special power, they feel that they will not be able to handle this contract soundly.

Your committee is now working on a new type of program, which is a modification of the Kansas Plan, to have in readiness if the Massachusetts Medical Service deems it unwise to handle this type of contract.

The type of authorization that is being formulated cuts the paper work for the doctor to one page, but cannot be publicized until the contract is in effect.

5. On March 15, 1947, the committee received a new fee schedule from the Veterans Administration (No. 10-2535a), which contains the maximum fees that the Veterans Administration will pay. No previous edition should be used.

James Keenan Bragger
Michael A. Tighe
Humphrey L. McCarthy, *Chairman*

APPENDIX NO. 6

Report of the Committee on Postgraduate Instruction

Up until the present year, the activities of the Committee on Postgraduate Instruction have been part of the more widespread work of the Committee on Postwar Planning. For this reason, it has not been possible heretofore to present anything more than a mere outline of the work of this committee. Consequently, in order to bring all councilors up to date, the following brief historical review is presented.

In the spring of 1945, it was voted by the Committee on Postwar Planning (*a*) to provide postgraduate medical instruction for all Massachusetts physicians without charge and to arrange teaching schedules so as to make it unnecessary for any physician to travel more than a few miles; (*b*) to divide the state into teaching districts or circuits and to carry on identical programs in all teaching hospitals in any given district; and (*c*) to carry on in any given district under the guidance of a local committee.

On the basis of the above plan, the Commonwealth was subdivided into teaching circuits as follows: District No. 1 — Pittsfield, Great Barrington, North Adams; District No. 2 — Springfield, Holyoke, Northampton, Greenfield; District No. 3 — Worcester and surrounding territory; District No. 4 — Fitchburg, Gardner, Leominster; District No. 5 — Lowell, Haverhill, Lawrence, Newburyport; District No. 6 — New Bedford, Fall River and the Cape; District No. 7 — North Shore; and District No. 8 — Greater Boston Area.

In attempting to satisfy the wants of the Greater Boston Area and with special reference to the needs of returning veterans, the Sanders Theater program was evolved. It is not necessary to review the history of the first Sanders Theater program given in the spring of 1946; all are agreed that it was a great success. Between 800 and 900 doctors registered for the series of lectures, and the average attendance for each exercise was about 400.

It is a pleasure at this point to direct attention to the fact that the concept of the Sanders Theater course came from Dr. Lewis Hurxthal. In addition, Dr. Hurxthal did most of the work in organizing the first program and in arranging for the many details involved in any such series of exercises.

In so far as the district programs for the 1945–1946 period are concerned, exercises were given in all districts with the exception of the Pittsfield and Fall River areas, Districts 1 and 6 respectively.

In retrospect, the year 1945–1946 was a period of trial and error, but a year with enough success to justify going ahead. It took personal trips to all sections of the Commonwealth to set up local committees and to sound out the ideas of various groups. It also took many meetings of the committee to work out the details. But despite difficulties and certain errors in planning, the concept of offering to various districts a series of exercises so planned as to make possible discussions by a team of instructors and to cover the Greater Boston Area with a series of lectures at Sanders Theater gained support and favor.

So much for past history. The work of the Committee on Postgraduate Instruction for 1946–1947 can be presented briefly as follows:

District Programs

District 1 (Pittsfield, Great Barrington, North Adams) — three exercises, eight instructors.
District 2 (Springfield, Holyoke, Northampton, Greenfield) — three exercises, nine instructors.
District 3 (Worcester and surrounding territory) — two exercises, six instructors.
District 4 (Fitchburg, Leominster, Gardner) — three exercises, eight instructors.
District 5 (Lowell, Haverhill, Lawrence, Newburyport) — three exercises, nine instructors.
District 6 (New Bedford, Fall River and the Cape) — three exercises, nine instructors.
District 7 (North Shore) — six exercises, twelve instructors.

Unfortunately, we have no detailed account of the total number of physicians reached by these district programs. We can say that all exercises have been extremely well attended and, in addition, that many graduates of substandard schools have accepted this opportunity to take part in graduate study.

Sanders Theater Exercises

As before, these meetings were under the able management of Dr. Hurxthal and his subcommittee. A series of ninety-two exercises were given by ninety-four instructors, covering a period of eight weeks. Total enrollment for the series was 1240 and the average attendance well over 500.

In other words, during the 1946–1947 season throughout Massachusetts, not including Sanders Theater, a series of twenty-three exercises have been presented by sixty-one instructors. If we add to this the Sanders Theater exercises, then the grand total for 1946–1947 is one hundred fifteen exercises conducted by one hundred fifty-five instructors. This is offered to the physicians of Massachusetts, including doctors in the armed services and residents and interns in various hospitals, by the Massachusetts Medical Society in cooperation with the Massachusetts Department of Health — all without charge.

Budget and Expenses

All instructors are paid. Those who take part at Sanders Theater receive $10 an exercise, and those who give instruction away from Boston receive $25 for the first exercise and $15 for subsequent exercises, the total amount for any one day not to exceed $55, plus expenses. The budget allowed for 1946–1947 was $3750, exclusive of the budget for the Bureau of Clinical Information. The Massachusetts Department of Public Health, after consultation with the committee regarding subject matter of certain programs, has been able to contribute $1100 toward the work of postgraduate instruction. With this help, we are sure to finish the year well within the total amount available.

Bureau of Clinical Information

The Bureau of Clinical Information has continued to flourish under the able direction of Miss Mary D. Gaston. Although the service rendered to returning medical officers has naturally lessened, those who do seek aid present problems that are increasingly difficult to solve. The matters of location, office space, home, equipment and hospital facilities are much less easy to answer than they were a year ago, and if information of this sort could be made available to the Bureau by the district medical societies, a more efficient job could be done in placing the right man in the right place. On the other hand, a number of men have been placed as a result of inquiries received from an industrial firm, summer camps, a university, state departments and town selectmen.

An increasing number of visiting physicians have made use of the Bureau. Indeed, during 1946, physicians from twenty states and territories and from twelve foreign countries were interviewed.

The circulation of the *Bulletin* markedly increased, nearly 9000 copies having been distributed, as compared with about 3500 in the preceding year. Although these are most frequently used by individual physicians, many copies are forwarded to local and outlying hospitals and agencies. The *Bulletin* now lists monthly, quarterly and yearly meetings, and all secretaries of medical clubs, associations and societies are earnestly requested to forward to the Bureau the dates and places of such meetings. Many conflicts of dates could be avoided if the *Bulletin* were consulted or the Bureau so informed.

Recommendations for 1947–1948

So far as can be determined, the present plan of postgraduate instruction has met with considerable favor. It is not contended that the plan is ideal. It is believed by the committee, however, that enough improvement can be made under the present organization to justify a continuation of the district programs for another year. Concerning the Sanders Theater exercises, no one has the answer. It was thought by many that this year's attendance would be less than that of last year. Such has not been the case. It is entirely possible that, with continued improvement, the Sanders Theater idea may become a fixture in the scheme of postgraduate instruction. At any rate, in view of this year's experience, the committee feels entirely justified in recommending that these programs be continued another year.

W. Richard Ohler, *Chairman*

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Weekly Clinicopathological Exercises

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

BENJAMIN CASTLEMAN, M.D., *Associate Editor*

EDITH E. PARRIS, *Assistant Editor*

CASE 33341

PRESENTATION OF CASE

An eighty-six-year-old woman entered the hospital because of vomiting.

For one year prior to admission the patient had had recurrent bouts of abdominal pain and vomiting, each lasting about a day. These became increasingly frequent until, after a particularly severe attack five weeks before admission, the patient entered another hospital, where a barium enema was said to have been negative. No gall-bladder or gastrointestinal x-ray films were taken. She had suffered from dyspnea, orthopnea and ankle edema for five months. She was discharged on digitalis and ferrous sulfate. The patient felt well until two days before admission to the Massachusetts General Hospital, when she experienced a recurrence of the vomiting; the next day she began to have severe cramping pain across the abdomen, with no radiation. There were no chills or fever, no rectal bleeding and no change in bowel habits. The appetite had been poor.

A bilateral salpingo-oophorectomy, appendectomy and removal of a uterine fibroid had been performed in 1901.

Physical examination revealed a debilitated, moderately dehydrated, ill appearing woman. The heart was enlarged, with a soft systolic murmur at the base. Occasional rales were heard at the lung bases. The abdomen was diffusely tender, particularly in the right upper quadrant. There was no spasm. The liver edge could be felt two fingerbreadths below the costal margin.

The blood pressure was 158 systolic, 60 diastolic.

Examination of the blood disclosed a white-cell count of 16,500; the urine contained an occasional white cell and many granular casts. A blood Hinton test was negative. The nonprotein nitrogen was 72 mg. and the total protein 6.7 gm. per 100 cc., and the chloride 106 milliequiv. per liter. A chest plate showed dorsal scoliosis on the right and clear lung fields; the heart was at the upper limit of normal in size but was displaced to the left, and the aorta was calcified and tortuous. A film of the abdomen showed arthritis of the lumbar spine, a small amount of gas in the bowel without dilatation, no soft-tissue masses or unusual areas of calcification and no free air under the diaphragm.

During the night the patient developed marked abdominal pain and tenderness and generalized spasm. Pelvic examination also showed diffuse tenderness. On the second day the patient became disoriented and had to be restrained. The temperature, which had previously been normal, rose to 102°F., the pulse to 100, and the respirations to 45. A stool specimen gave a ++ guaiac reaction. Some purulent exudate was recovered on abdominal tap, which on smear showed gram-positive cocci and bacilli. The patient was given penicillin, streptomycin, fluids and oxygen but continued to fail, dying on the third hospital day.

DIFFERENTIAL DIAGNOSIS

DR. PETER SARRIS: This eighty-six-year-old woman had had recurrent attacks of abdominal pain for a year. The attacks were often preceded by vomiting. In the differential diagnosis of an acute abdomen we realize that the history plays the most important role, and one tries to select the details that will give the clues to the final diagnosis. The age of the patient might influence us in the final diagnosis by making certain diseases less likely. Conversely, the age might confuse the case in that the history as given by an aged person is not always reliable. Also, one must bear in mind that a lesion is much likelier to be fatal at that age than in a younger person and in a shorter interval of time.

Important points are that the attacks were rather distinct, lasting about a day, and that the patient was apparently fairly well between attacks. It is stated, however, that she was debilitated. That may have been because of her age, the accumulated result of the insults produced by each one of these attacks or the progression of the underlying disease. No mention is made of the amount or character of the vomitus.

The severe attack five weeks prior to entry sheds some light in that the patient apparently recovered spontaneously and was well enough to be sent home. Presumably, then, the correct diagnosis was not made at that time, unless they thought that she could not stand surgery in spite of a correct diagnosis.

A barium enema was negative, and no Graham test or gastrointestinal series was done.

No mention is made about the red-cell count or hemoglobin or about anemia. The fact that the patient was discharged on digitalis and ferrous sulfate, however, indicates that the disease was associated with anemia.

The character and location of the pain are helpful, suggesting peristaltic pain across the abdomen, and either large-bowel or small-bowel spasm, or even biliary colic could have been responsible.

The absence of chills and fever or of rectal bleeding is helpful only in a negative way, and I do not

know whether the statement "no change in bowel habits" means during the attacks only.

We must accept the fact that a bilateral salpingo-oophorectomy and appendectomy had been performed, so that those organs can be eliminated as a direct cause of the disease. With the background of a previous operation, the story suggests small-bowel obstruction. A previous operation is, of course, not necessary for that diagnosis, since one third of all cases of small-bowel obstruction are not preceded by surgery.

The dyspnea, palpitation and ankle edema can be dismissed. They are significant but not so far as the diagnosis is concerned. They undoubtedly played a part in hastening death, but could not account for this picture. The blood pressure on admission indicates that the patient was not in shock — at least, the blood pressure was not remarkable. The white-cell count was 16,500, which is not helpful in the differential diagnosis. There were granular casts in the urine but no mention of albuminuria. I always thought that any number of granular casts should be accompanied by albuminuria; that also is not helpful in the differential diagnosis. The nonprotein nitrogen of 72 mg. per 100 cc. could have been a result of a combination of nephrosclerosis and dehydration in a patient of that age but is not of specific help otherwise.

The chest film does not help. The plain film of the abdomen was negative so far as positive findings are concerned; I had hoped that we should get more evidence from it. There was a small amount of gas in the bowel. If it was in the large bowel, it means nothing, but in the small bowel, even though it is a small amount of gas, it may be significant, particularly if in repeat films the gas has increased. I should like to see the x-ray films. I see that a tube was put down, although the record does not mention that there was gastric drainage or what was obtained and how much.

Dr. Stanley M. Wyman: I believe that the gas lies in the small bowel; there are several loops of bowel in the left upper quadrant. They are at the upper limits of distention to be called definitely normal. It is more consistent with a picture of ileus. There is unusual calcification in the right upper quadrant.

I believe that that may well lie in the pleural cavity. That fact is not mentioned in the record, but it should have been. There is an unusually tortuous line of calcification in the right upper quadrant that is probably vascular, and slight calcification in the right upper quadrant seen below the large arc in about the expected location of the gall bladder. It suggests previous biliary disease, but it is not definite.

Dr. Sarris: Is there any evidence of gas in the biliary tree?

Dr. Wyman: I do not see any.

Dr. Joseph C. Aub: What is the dense area to the right of the tube?

Dr. Wyman: I think that that is a fold of bowel.

Dr. Sarris: There are no signs of gallstones throughout the gastrointestinal tract?

Dr. Wyman: I do not see any.

Dr. Sarris: Dr. Wyman's statement that there was gas in the small bowel bordering on the abnormal is helpful. It is important to know whether it was taken on admission or on a later day.

Dr. Tracy B. Mallory: It was taken on the day of entry.

Dr. Sarris: The final significant point is that an abdominal tap produced purulent material that on smear showed gram-positive cocci and bacilli, thus confirming the diagnosis of purulent peritonitis. Purulent peritonitis from an infarcted solid organ occurs late in the disease, and for that matter with a solid tumor, or a cyst twisting on its pedicle, the symptoms of infarction occur first and are followed by progression with secondary infection. I believe that the peritonitis came from a rupture of a hollow viscus — not from a perforated ulcer or perforated malignant tumor of the stomach, because I cannot visualize such distinct attacks caused by carcinoma of the stomach or attacks lasting only a day by an ulcer. The crampy nature of the pain is against that diagnosis, although pyloric stenosis occurs with crampy pain, preceded by vomiting.

Mesenteric thrombosis is fairly frequent at this age, ending with peritonitis, but it is not likely in this case because of the duration. It often causes premonitory symptoms, with minor attacks weeks before the final one, from thrombosis of minute vessels. I have not seen a case with distinct attacks for such a long period, and I believe that mesenteric thrombosis can be dismissed. Regional enteritis producing final perforation and peritonitis can also be discarded because the attacks were of such short duration. Acute mechanical small-bowel obstruction with strangulation is more difficult to dismiss. Recurrent attacks are not unusual, but I think that this patient had too many attacks for that. Usually, patients with acute small-bowel obstruction from adhesions — due either to a congenital band or to previous surgery or a Meckel's diverticulum — have only one or two preceding attacks and then get into trouble from gangrene. Carcinoma of the large bowel I shall dismiss, since there was no recorded change in bowel habits and the process was not progressive enough. Vomiting is not a prominent feature of carcinoma of the large bowel except late in the course of the disease. Carcinoma of the cecum can be associated with anemia but does not produce obstruction with obstructive pain, except terminally.

If this patient had had a Meckel's diverticulum, the chances are that it would have been discovered at the previous operation. Diverticulitis is a frequent cause of peritonitis in this age group, although

vomiting is seldom a prominent symptom of diverticulitis, which usually starts with fever. This patient was afebrile, and the attacks were of short duration.

Volvulus, particularly in the sigmoid, ends up with strangulation, infarction and peritonitis, but this patient had had too many attacks over a year for volvulus, the vomiting was too prominent, and the bowel symptoms were absent. The x-ray picture is not that of volvulus of the sigmoid. Recurrent intussusception from a small-bowel tumor such as a polyp is a definite possibility. Against it, however, is the fact that when a patient dies from one of these tumors with intussusception the evidence of small-bowel obstruction preceding it is much more definite than in this case. The intussuscepted bowel produces obstruction for a long enough time to cause dilated bowel before the infarction goes on sufficiently to perforate the bowel. I cannot exclude that diagnosis, however.

Biliary-tract disease must be seriously considered. The frequency of attacks of colic suggests a common-duct stone, especially in this age group. In younger patients recurring attacks of gallstone colic result from stones only in the gall bladder, but my experience has been that in older people when the disease is limited to the gall bladder it is frequently associated with perforation. If this patient had biliary-tract disease with such recurrent attacks, with a state of well being between attacks, common-duct stone would be the diagnosis. Although there were no chills, fever or jaundice, I cannot believe this woman had frequently recurrent gallstone colic from stones only in the gall bladder ending in an attack with perforation of that organ. One must assume common-duct stones along with it.

Gallstone ileus is a definite possibility because it accounts for the recurring attacks. These attacks could have been caused by either common-duct stones or the passage of many stones from a choledochoduodenal or choledochojejunal fistula, with crampy pain and vomiting. Finally, a large stone came down and bobbed around in the small bowel. There is evidence that it could finally have grown larger from the fecal concretions, and then produced the obstruction followed by perforation and peritonitis. The only thing against that is the fact that when gallstones perforate and cause general peritonitis, they are preceded for some time by intestinal obstruction.

Finally, carcinoma of the small bowel is rare, but whatever this patient died of is also probably infrequent. Of course, the fact that one expects an unusual case at these exercises does not justify the making of a rare diagnosis. The recurrent attacks are characteristic of cancer of the small bowel, which is a difficult diagnosis to make preoperatively. Vomiting preceding pain is a common story. Anemia, which I assume this patient had, is consistent with carcinoma. The lack of bowel symptoms is more consistent with a small-bowel than with a large-bowel lesion. In the former the higher the lesion, the likelier it is to be carcinoma, and the lower down the likelier to be sarcoma.

I believe that this woman had general peritonitis from perforation of a hollow viscus. That is as far as I can go with any degree of certainty. To go beyond that and try to state the cause of the perforation one would have to resort to guesswork. Is there any description of blood cells in the aspirated fluid?

DR. MALLORY: They are not mentioned.

DR. SARRIS: In purulent peritonitis secondary to infarction there are numerous red cells along with the pus and bacteria.

I shall conclude by saying that my first diagnosis is carcinoma of the small bowel, with perforation, and the second choice is biliary-tract disease, with gallstone ileus and perforation.

CLINICAL DIAGNOSES

Perforated viscus (? stomach or gall bladder).
Generalized peritonitis.

DR. SARRIS'S DIAGNOSIS

Carcinoma of small bowel, with perforation?
Biliary-tract disease, with gallstone ileus and perforation?

ANATOMICAL DIAGNOSES

Carcinoma of gall bladder, with perforation.
Cholelithiasis.
Choledocholithiasis.
General peritonitis.
Arteriosclerosis, generalized.
Calcareous aortic stenosis.
Hypertrophy of heart.
Nephrosclerosis.

PATHOLOGICAL DISCUSSION

DR. MALLORY: This was obviously a difficult case. The clinicians did not commit themselves any farther than a perforated viscus. Dr. Sarris pointed a finger of suspicion to the biliary tree and also mentioned a carcinoma as a likely possibility, but he did not put the two together. That combination is what was found, however. The patient had a carcinoma of the gall bladder. Carcinoma of the gall bladder is found almost invariably in patients who have had gallstones for years. There were a great many stones within the bladder. A perforation had developed at the apex of the gall bladder, from which several stones had passed into the peritoneal cavity. There also was a chain of fourteen large, densely calcified stones in the common bile duct. I think that that beautiful arc-shaped line of calcification across the film represents the chain of stones.

As is usual in a patient eighty-six years of age, there were many incidental lesions. She had generalized arteriosclerosis, contracted kidneys, a hyper-

trophied heart, calcification of the aortic valve with a slight grade of aortic stenosis and, of course, generalized peritonitis.

DR. SARRIS: Was there any evidence of a previous fistula?

DR. MALLORY: The gall bladder was adherent to the transverse colon, but there was no fistula.

CASE 33342

PRESENTATION OF CASE

A seventy-seven-year-old retired sea captain was admitted to the hospital because of dyspnea and orthopnea.

Fifteen years prior to admission the patient had had pleurisy and had spent nine months in a sanatorium. He was then free from chest symptoms until nine months before admission, when he developed a "lump" below the right nipple that broke down, discharged a cupful of pus and remained open until the time of admission. Areas of the sinus tract were biopsied and showed acute and chronic inflammation, with granulation tissue and foreign-body, giant-cell reaction. Smears were negative for acid-fast organisms, but guinea-pig inoculations were not carried out. An x-ray film of the chest at that time showed extensive calcification at both apices, particularly on the right. There was no definite cavitation. Calcifications were also noted in both hilar regions. The diaphragm was flattened on the right and adherent laterally to a markedly thickened pleura, which extended upward for a distance of about 10 cm. The margin of the pleura was irregularly calcified. Four months before admission the patient noticed the onset of dyspnea and orthopnea, both of which became increasingly severe until the time of admission, when merely the effort of sitting up in bed caused dyspnea. Three months before admission a persistent cough, productive of small amounts of yellow sputum, appeared. Two weeks before admission the discharge from the sinus increased, but the cough seemed to decrease slightly. At the same time frequency, nocturia and burning on urination, which had bothered the patient for about fifteen years, became much worse. During the two days prior to admission his general condition seemed much worse to his family, and a physician found the temperature to be 102°F.

Thirteen years before admission a transurethral prostatectomy had been performed because of the urinary symptoms mentioned above. These continued, however, and two years before admission, another transurethral resection was performed, with the diagnosis of fibrosis of the bladder neck. Four months before admission a biopsy of one of numerous small lesions on the face and forehead revealed a basal-cell carcinoma.

Physical examination showed a well developed but chronically ill man who was dyspneic on the slightest exertion and somewhat disoriented. The skin showed a diffuse brownish discoloration. There were bilateral cataracts. The neck veins were distended. There were moist sticky rales throughout both lower-lung fields. There was edema and pigmentation of the ankles. The prostate gland was slightly enlarged, soft and tender.

The temperature was 101°F., the pulse 88, and the respirations 20. The blood pressure was 145 systolic, 85 diastolic.

Examination of the blood disclosed a red-cell count of 2,600,000, with a hemoglobin of 8 gm., and a white-cell count of 19,800, with 87 per cent neutrophils. The urine gave a ++ test for albumin, and the sediment contained innumerable white cells. Two sputum smears, three sputum concentrations, one gastric aspiration, one smear of material from the sinus tract and one concentration of the same material were negative for acid-fast bacilli. The total protein was 6.5 gm., the nonprotein nitrogen 44 mg. per 100 cc., and the chloride 116 milliequiv. per liter. Urine cultures grew out colonies of colon bacilli and pyocyaneus bacilli, and those from the sinus tract, *Staphylococcus aureus* and a beta-hemolytic streptococcus. An x-ray film of the chest on the day of admission showed fluid in both pleural cavities and a granular increase in density throughout both lung fields, most prominent in the left midlung field.

During the hospital stay the temperature averaged 100°F., rising to 103 terminally; the pulse varied from 90 to 130, and the respirations from 20 to 40. Flatness and absent breath sounds developed at the right base, with bronchial breath sounds over the right middle lobe. On the eighth hospital day a chest film was described as not showing much change except a slight increase in the amount of fluid in the right side of the chest. The patient was given penicillin, sulfadiazine, fluids, Purodigin and oxygen and was put on constant bladder drainage. He did not do well, became gradually less responsive and died on the tenth hospital day.

DIFFERENTIAL DIAGNOSIS

DR. J. GORDON SCANNELL: In this case an acute and chronic pleuropulmonary infection had extended through the chest wall and failed to heal. There was also evidence of a chronic urinary-tract infection, which I consider chiefly incidental, and a degree of cardiac insufficiency consistent with the patient's age and debilitating illness.

The three most frequent causes of empyema necessitatis, followed by persistent fistula, are tuberculosis, actinomycosis and a neglected empyema due to one of the usual pyogenic organisms. Although pyogenic organisms were cultured from the sinus tract, the natural history of the lesion leads me to suspect that they were secondary invaders rather than primary agents. Also to be considered are the generic causes of persistent fistulas — namely, can-

cer, foreign body (including the sequestrum of osteomyelitis), syphilis and other mycotic and granulomatous infections. We have little specific bacteriologic evidence to support any of these, although it is conceivable that as a sea captain, assuming his command to be of reasonable size, the patient was exposed to all kinds of exotic infections. I mention the matter chiefly to point out that in many regions, although not in this area, pulmonary calcifications are said to be accompanied more frequently by histoplasmin than by tuberculin sensitivity; certainly, such calcifications are becoming less and less synonymous with old acid-fast infection.

Of the usual causes of persistent fistula of the chest wall, certainly tuberculosis must be ruled out. It seems entirely reasonable that the patient had had a tuberculous infection in the past, even if the organism could not be demonstrated during the present illness. Although the evidence is of negative nature and hence may well be proved inadequate, I am inclined to accept it at its face value and assume, therefore, that this was not tuberculosis. I am influenced chiefly by the failure to find tubercles in biopsies of the sinus tract, in addition to the convincing evidence of negative sputum concentrations and negative gastric lavage, either or both of which should have been positive if this had been an overwhelming tuberculous infection.

In the absence of acid-fast infection, the likeliest diagnosis is actinomycosis. Here again we lack positive bacteriologic evidence, but it is my experience that such evidence is frequently obtained with difficulty, especially in the face of secondary infection, until adequate pathological specimens are obtained.

Before proceeding further, I should like to review the x-ray films. To my mind the remarkable thing about the films taken four months before entry is the relative lack of demonstrable disease except for the process in the right lower portion of the chest. There is certainly evidence of old pleurisy on this side, with narrowing of the interspaces and apparent pleural thickening with calcification, but it seems to me that there also is parenchymal involvement of the right middle, as well as of the right lower, lobe. The films after entry and just before death seem consistent with acute bronchopulmonary infection and edema. The increase of the right pleural pocket, however, and the granular density in the left midlung field, are noteworthy and consistent with the productive type of inflammatory lesion consequent on actinomycosis.

Dr. Milford D. Schulz: In the film taken six months before entry the most striking point is evidence of old pleurisy at the right base, with calcification. The entire right side of the chest is smaller than the left, which can be accounted for on the same basis. Evidence of an old acid-fast infection is not impressive.

The film made at the time of entry shows a granular mottling in the central portions of the lung, which can certainly have been due to pulmonary edema. There is some fluid in the right pleural sinus, which, on a subsequent examination, is seen to have become pocketed low in the posterolateral portion of the chest like an encapsulated empyema. There may be chronic pulmonary disease in the right lower portion of the chest, but most of the irregular areas of density seem to be part of the pleural calcification.

A spot film of the right lower portion of the chest shows deformity of one rib. Perhaps the calcification in the pleura was due to hemorrhage following trauma.

Dr. Scannell: The x-ray films do not help us particularly in arriving at a specific diagnosis. They suggest, however, an explanation for the rather marked symptoms of pulmonary insufficiency—namely, the cumulative effects of old chest trauma, with crippling of the bellows mechanism and fairly extensive senile emphysema.

To return to the specific chest-wall infection, however, although the x-ray films certainly do not of themselves suggest actinomycosis, they are compatible with that diagnosis. Chiefly in favor of it is the apparent disregard the process had for anatomic barriers and the complete lack of any anatomically circumscribed lesion. Failure to recover the organisms in the discharge is the only barrier to a positive clinical diagnosis. A more complete description of the nature of the sinus tract would have been helpful, since an actinomycotic fistula usually presents a rather characteristic type of purplish, indolent granulations, and often an anthill type of fistula. The hint about yellow sputum is an encouraging bit of evidence, and the note about the reciprocal relation between cough and sinus suggests a bronchopleural-cutaneous fistula that did not assume major proportions.

I am aware that I am discarding a number of physical findings in devoting the major portion of the discussion to the chest, but I believe that in this age group the catalogue of incidental pathological findings will parallel the diversity of the therapy. The immediate cause of death, in my opinion, was failing respiratory and cardiac reserve in a man with a crippled respiratory apparatus and a reduced oxygen-carrying capacity.

I believe that the primary disease was actinomycosis of the pleura, lungs and thoracic wall, with secondary infection. As subordinate diagnoses I include pulmonary edema and chronic pyelonephritis.

Dr. Lewis K. Dahl: Despite the x-ray reports, which were read as being more consistent with pneumonitis or pulmonary edema than with tuberculosis, the clinicians who saw this patient believed that he had an overwhelming tuberculous infection, probably tuberculous pneumonia. No organisms

were found by smear, however, on several examinations of the sputum, gastric aspirations and sinus drainage. Death occurred, of course, before bacteriologic confirmation of this diagnosis could have been expected.

I saw the patient terminally and agreed with the numerous predecessors; I was disturbed that a thorough search for actinomycosis had not been carried out.

Clinical Diagnoses

Pulmonary infection, probably active tuberculosis.
Sinus tract (? tuberculosis or from rib).
Bronchopneumonia.
Benign prostatic hypertrophy.
Urinary-tract infection.

Dr. Scannell's Diagnoses

Actinomycosis of pleura, lungs and thoracic wall.
Pulmonary edema.
Chronic pyelonephritis.

Anatomical Diagnoses

Organizing pneumonia.
Chronic pneumonitis.
Acute glomerulonephritis.
Pulmonary edema and congestion.

Pathological Discussion

Dr. Tracy B. Mallory: Dr. Scannell has presented a persuasive case for actinomycosis. We naturally considered that diagnosis and did our best to substantiate it, but entirely without success. The right pleural cavity contained an old encapsulated empyema, and the left pleural cavity was entirely obliterated by fibrous adhesions. The lungs were almost completely consolidated. The pleura over both lungs was thickened and fibrous, measuring up to 3 mm. in places. At the left apex was an old puckered fibrous scar containing numerous small dilated bronchioles and much anthracotic pigment that was quite characteristic of a healed apical tuberculosis. There was no evidence of activity. The remainder of both upper lobes and about a third of each lower lobe were firm, noncrepitant and cut with difficulty, indicating diffuse fibrosis. The remaining lung tissue was markedly congested and edematous but still slightly crepitant. Microscopical examination showed all stages of organizing pneumonia from incipient lesions to dense fibrous scars. In many areas the persisting alveoli were partially epithelialized and contained many large phagocytes, filled with cholesterol vacuoles. Nothing suggestive of either tuberculosis or actinomycosis could be found.

The surprise of the autopsy was provided by the kidneys. Although not remarkable grossly, they showed on microscopical examination a severe grade of acute glomerulonephritis. It seemed probable, therefore, that renal insufficiency was an important factor in the immediate mechanism of death.

Little is known about the etiology of progressive organizing pneumonia. We have become increasingly aware of its importance in recent years. The clinical and x-ray pictures that it presents are readily confusable with pulmonary neoplasm, and consequently the surgeon is led to perform lobectomies or even pneumonectomies. In this case the presence of the acute glomerulonephritis suggests that the beta-hemolytic streptococci that were cultured during life were of more than coincidental importance. Whether they were the primary cause of the difficulty I cannot say from the evidence at hand.

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Q FEVER IN THE UNITED STATES

On previous occasions mention has been made in these columns of the occurrence of Q fever and its relation to the nonbacterial pneumonias. The most recent reference[1] chiefly concerned a series of reports of circumscribed outbreaks of the disease that occurred in American and British military units in the Mediterranean area during the latter part of the war. Reference was made to outbreaks in this country that involved military units transferred from the Mediterranean Theater and laboratory workers engaged in the study of infectious material from the military units. In addition, a single case of Q fever acquired in Panama was mentioned.

It should be recalled that Q fever was first described as a severe influenza-like disease in Queensland, Australia, where it affected slaughterhouse workers, bushmen (foresters) and dairy workers. The causative agent there was found to be a filter-passing agent that was called *Rickettsia burneti*, and the reservoir of infection was shown to be the bandicoot, a rodent that is prevalent in the Australian bush. Certain ticks serve as vectors to transmit infection to man either directly from these rodents or through domestic animals that serve as intermediate hosts. The feces of ticks were found to be heavily infected with the rickettsias.

In the United States a similar if not identical agent was found in ticks collected from several northwestern and southwestern states, all the way from Washington to Texas. Isolated cases of infection have been reported in this area, and an outbreak occurred in the laboratories of the National Institute of Health, where the agent was being studied. Interestingly enough, the workers in the particular laboratory where the agent was being investigated were not involved, and it was thought that the infection was air borne by means of infected dust. That outbreak was the first in which pulmonary lesions similar to those of primary atypical pneumonia were described. A second outbreak has occurred at the same laboratory.[2]

The first sizable outbreak of Q fever acquired naturally in the United States has now been described in considerable detail. This occurred among stockyard and slaughterhouse workers in Amarillo, Texas. The circumstances under which it took place are of considerable interest, suggesting that similar outbreaks may be expected where cattle from endemic areas are slaughtered.

The epidemiologic aspects of this outbreak are quite revealing.[3] The cases all occurred among employees in a stockyard, its adjoining auction yards and a neighboring packing plant. There were 55 cases among 136 exposed persons. This is an attack rate of 40 per cent, which compares with the 50 per cent attack rates that were reported among the affected military units in the Mediterranean area. All the cases in this outbreak occurred between March 7 and 29, 1946, with 50 per cent of the cases in the stockyard workers beginning on or before March 10 and 50 per cent of those in the packing plant beginning on or before March 14.

A careful check of the sales' record revealed that only one lot of white-faced heifers, which were un-

loaded in the stockyard on February 23, could have fulfilled the requirement of having exposed all the categories of workers among whom the disease occurred. The known incubation period of the disease fitted perfectly: it was sixteen days from the day when this shipment was received to the day when 50 per cent of the cases began among the stockyard workers, and seventeen days had elapsed from the time when the slaughtering and processing of this lot of cattle began to the day when 50 per cent of the cases occurred in the packing plant employees. Among the latter, the attack rate among those engaged in killing the animals and in handling the freshly killed meat was 68 per cent, as compared with an 8 per cent attack rate among the remainder of the employees of the plant.

The actual mode of infection in this outbreak was not determined. No evidence was obtained to implicate an arthropod vector, and there was no evidence of person-to-person spread. Because of the explosive nature of the outbreak, and since evidence was obtained that afterward there were still a number of susceptible persons there, it was assumed that the infectious agent did not remain long in the packing plant. In the stockyard the epidemic lasted longer. The risk there involved all those handling live cattle, and although the first case among these employees occurred three days before the first case in the packing plant, the last occurred ten days after the outbreak in the packing company was over. It therefore appears that the infectious agent was present in the stockyards for a considerable period. It may have persisted in the dust, as suggested in the laboratory outbreak already mentioned, or it may have been deposited there from the excreta of cattle, since it is known to be present in the urine of experimentally infected animals and in the feces of the arthropod vectors. Another important feature of the outbreak is the fact that the disease was transmitted to stock handlers from apparently healthy cattle.

The clinical features of 18 cases that were studied were not unlike those described in the Mediterranean outbreak and among the infected laboratory workers.[4] There was great similarity in the general symptoms, with wide variations in their severity. The outstanding findings were a rather abrupt onset associated with frontal headache, chilly sensations, general malaise, high fever of five to ten days' duration, essentially normal white-cell counts, roentgenographic evidence of soft, diffuse, patchy infiltrative lesions similar to those of primary atypical pneumonia, with minimal symptoms and signs referable to the respiratory tract, and a rapid and uneventful convalescence. There were practically no cutaneous lesions; the spleen was felt in only one case, and the lymph nodes were not enlarged.

Serologic tests were relied on to establish the diagnosis in almost every case.[5] Significant titers of complement-fixating antibodies were demonstrated with Q fever antigens during the second week after the onset of illness; in some cases, however, the highest titers were not reached before the fourth or fifth week. In most cases, high titers were maintained at least for a few weeks. Positive serologic confirmation was obtained in 49 of the 55 suspected cases. The complement-fixation tests were highly specific for Q fever, the same serums failing to show rises with endemic typhus or spotted-fever rickettsial antigens. Serums from unexposed persons, including household contacts of the cases, gave negative results. Some positive serologic results were obtained in a small group of presumably exposed persons, suggesting that there may have been unrecognized illness or inapparent infection.

Strains of rickettsia apparently identical with *Rickettsia burneti* were isolated from the serums of 2 cases.[6] This was accomplished by workers in the virus and rickettsia division of the Lederle Laboratories. Although guinea pigs have generally been used for isolating the agent from human blood, the strains from this outbreak were obtained by passage through dilute brown agouti (dba) mice, which have already been found to be of value in studies of other viral and rickettsial diseases.

It is to be expected that Q fever will again be encountered in this country, and the experience in Australia suggests that the occurrence of this disease among persons who handle cattle that originate in endemic foci may be anticipated. Indeed, an outbreak of Q fever is alleged to have occurred recently in one of the Chicago packing plants, but details of this outbreak have not yet

been published. It may be difficult to detect the presence of infection in animals except by careful epidemiologic and serologic studies. It seems worth while, however, to make a survey among herds of cattle in an attempt to discover the various foci of this infection and to determine its mode of transmission in this country, with a view toward the development of methods for its control.

A report of a case of Q fever that was diagnosed in Boston but was acquired in Italy appears elsewhere in this issue of the *Journal*. This case emphasizes the importance of considering Q fever in the differential diagnosis of nonbacterial pneumonias in areas where the agent is known to occur and in persons who have been in such areas within the incubation period of the disease. Since the foci and reservoirs of infection of Q fever are not all known it is well to be on the alert for the occurrence of the disease in new localities. It should also be borne in mind that Q fever may manifest itself, as it usually does in Australia and perhaps in the Balkans, as a rather severe influenza-like infection with a more prolonged febrile course than that usually seen in influenza-virus infections but without evidence of pulmonary involvement.

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NEW ARMY MEDICAL CENTER

The Office of the Surgeon General has released plans for the construction, by the Army Corps of Engineers, of the greatest medical research center in the world. This group of buildings, to be erected at Forest Glen, Maryland, at an initial cost of approximately $40,000,000 will be equipped to anticipate and meet the medical problems of the future as well as to cope with those of the present — certainly a worthy and certainly an ambitious program.

The official designation of this imposing project is the Army Medical Research and Graduate Teaching Center. It will consist of a 1000-bed general hospital capable of expansion to 1500 beds, an administration building housing also the Army Medical Museum, a building for the Army Institute of Pathology, buildings constituting the Central Laboratory Group, a working library, staff quarters, an animal farm and other buildings.

The location at Forest Glen, just outside Washington, D. C., will provide a close relation to the Walter Reed General Hospital, the Navy Medical Center, the medical schools of Washington and the proposed Washington Medical Center. The Center will also have the advantage of co-operation with the National Bureau of Standards, the National Institute of Health and the National Research Council. Two hundred of its beds are to be specifically designated for research.

The Institute of Pathology will house the Department of Pathology, the American Registry of Pathology and the Army Medical Illustration Service. The Institute of Medicine and Surgery will house the departments of Research Medicine, Research Surgery, Research Dentistry, Veterinary Medicine, X-ray and Radiation, and Preventive Medicine. There will thus be brought together units from all over the country: the Medical Nutrition Laboratory from Chicago, the Medical Field Research Laboratory from Fort Knox, Kentucky, and the Surgical Research Unit from Fort Sam Houston, Texas.

Centralization is the keynote today; the medical centers that have sprung up and are springing up or would like to spring up are legion. Centralization, moreover, has tremendous advantages with its pooling of equipment and of administrative facilities and its opportunities for the exchange of ideas. It also has its disadvantages: a rigidity where flexibility is desirable and the stifling of individual enterprise, the Army never having been noted for its eager reception of new ideas. But such a splendidly conceived institution offers a great opportunity, and it is to be hoped that the Army will use this opportunity to its fullest advantage, without the traditional Army wastefulness of men and materials.

Stone walls do not a prison make, but neither do marble halls inspire original thinking unless freedom of thought and devotion to the truth are in the very mortar that binds their blocks together. Open minds as well as dollars must be put into the Army Medical Center. Originality seems to avoid conventional surroundings: radium came to us from a dilapidated shed in Paris; Sir Isaac Newton received the full impact of his epoch-making apple while sitting under a tree; and Mr. Baruch is known to have given forth some of his most valuable ideas while sitting on a park bench in Washington.

MASSACHUSETTS MEDICAL SOCIETY

DEATHS

BAXTER — G. Raymond Baxter, M.D., of Newton Center, died on July 24. He was in his fifty-third year.

Dr. Baxter received his degree from Tufts College Medical School in 1922. He was a fellow of the American Medical Association.

His widow survives.

BLAIR — Orrin C. Blair, M.D., of Lynn, died on August 3. He was in his sixty-seventh year.

Dr. Blair received his degree from Harvard Medical School in 1903. He served on the surgical staff of the Lynn Hospital and was a fellow of the American College of Surgeons and the American Medical Association.

His widow, a son and a daughter survive.

GILMAN — Florence Gilman, M.D., of Northampton, died on August 1. She was in her seventieth year.

Dr. Gilman received her degree from Tufts College Medical School in 1903. She was formerly physician at Radcliffe and Smith colleges and assistant physician at Vassar College, and was a fellow of the American Medical Association.

A niece survives.

GOODALL — Edwin B. Goodall, M.D., of Newton Center, died on August 6. He was in his sixty-sixth year.

Dr. Goodall received his degree from University of Maryland School of Medicine and College of Physicians and Surgeons in 1909. He was a member of the New England Ophthalmological Society and the American Academy of Ophthalmology and Oto-Laryngology.

His widow survives.

NIGHTINGALE — James Nightingale, M.D., of Worcester, died recently. He was in his seventy-second year.

Dr. Nightingale received his degree from Harvard Medical School in 1900. He was formerly medical director of the Jewish Home for Aged and Orphans and was a fellow of the American Medical Association.

An aunt and two nephews survive.

ROY — Joseph N. Roy, M.D., of Webster, died on March 19. He was in his seventy-fifth year.

Dr. Roy received his degree from Baltimore University School of Medicine in 1902. He was a fellow of the American Medical Association and an organizer of the Webster District Hospital.

His widow, a son and two daughters survive.

WENTWORTH — Arthur H. Wentworth, M.D., of Falmouth, died on July 30. He was in his eighty-fifth year.

Dr. Wentworth received his degree from Harvard Medical School in 1891. He was a former member of the Massachusetts Medical Society.

A daughter and seven grandchildren survive.

MEDICOLEGAL ABSTRACT

Hospitals: Applicability of the Massachusetts Labor Relations Act and the Federal Labor Management Relations Act. As a result of the decision of the Massachusetts court in *Saint Luke's Hospital* v. *Labor Relations Commission*, decided on November 30, 1946, and of the Labor Management Relations Act, enacted in 1947 by Congress over President Truman's veto, charitable hospitals in Massachusetts are in general exempt from the provisions of the state and federal labor-relations acts. The new Labor Management Relations Act by its definitions has excluded "any corporation or association operating a hospital if no part of the net earnings inures to the benefit of any private shareholder or individual." The Massachusetts Labor Relations Act contains no such provision, but the same result is accomplished by the decision of the Massachusetts court in the Saint Luke's Hospital case.

In that case the Laundry Workers, Dry Cleaners and Miscellaneous Workers of the Amalgamated Clothing Workers of America had sought certification by the Labor Relations Commission as the collective bargaining agency of certain nonprofessional employees of the hospital. The hospital sought the ruling of the courts whether or not the Massachusetts Labor Relations Act, on which the union was relying, applied to the hospital. The court held that the hospital was a public charity and not engaged in industry and trade and that therefore the act did not apply because it applied only to questions affecting industry or trade. The court declined to consider whether this same decision would be made if a hospital "were engaged in commercial undertakings, as the care and letting of realty or the conduct of a mercantile establishment, for the benefit of the hospital and employed persons in such undertakings."

Charitable hospitals should not infer from the decision or from their exemption under the new federal Labor Management Relations Act that it is illegal for their employees to join labor unions or even that the hospitals have an entirely free hand to take whatever steps they may see fit to attempt to prevent the unionization of their employees. For, although the rights and privileges that the state and national labor-relations acts give to employees generally do not now extend in Massachusetts to the employees of charitable hospitals, employers in Massachusetts were subject to some restraints in resisting the unionization of their employees even before those acts were passed.

MISCELLANY

RHEUMATIC-FEVER RESEARCH

An announcement was made on July 7 of the formation of the Helen Hay Whitney Foundation for basic scientific research in rheumatic fever. The members of the distributing committee of the Foundation are Mrs. Charles S. Payson

(Joan Whitney), John Hay Whitney, Frederick K. Trask, Jr., and William Harding Jackson. Dr. T. Duckett Jones, of Boston, has been appointed medical director of the Foundation, with temporary offices in the New York Hospital, 525 East 68th Street, New York City. Dr. Jones, who has been granted a leave-of-absence from his positions at the Harvard Medical School and the House of the Good Samaritan, stated, "The purpose of the Foundation is to make possible research that may increase our knowledge of rheumatic fever — the leading fatal childhood disease."

BOOKS RECEIVED

The receipt of the following books is acknowledged, and this listing must be regarded as a sufficient return for the courtesy of the sender. Books that appear to be of particular interest will be reviewed as space permits. Additional information in regard to all listed books will be gladly furnished on request.

The Unconquered Plague: A popular story of gonorrhea. By Harry Wain, M.D., M.S.P.H. 12°, paper, 119 pp. New York: International Universities Press, 1947. $1.50.

This small book, written for the laity, treats of the medical and social aspects of the disease. In order are considered the disease and its history, the gonococcus, its effects on men, women and children, its treatment and prophylaxis and gonorrhea as a social problem. The chapter on prostitution and sexual promiscuity could have been omitted without lessening the value of the book. A glossary and index complete the volume. The price is excessive.

Pediatric Gynecology. By Goodrich C. Schauffler, M.D., assistant professor of obstetrics and gynecology, University of Oregon Medical School, and visiting gynecologic surgeon and obstetrician, Multnomah Hospital, Portland, Oregon. Second edition. 8°, cloth, 380 pp., with 75 illustrations. Chicago: Year Book Publishers, Incorporated, 1947. $6.00.

This second edition of a work first published in 1942 has been thoroughly revised to bring it up to date, and new material has been added in nearly every chapter. The section on gynecologic surgery in children has been expanded, and those on social service and medicolegal aspects have been considerably revised. Data on the use of penicillin have been incorporated throughout the text. The lists of commercial preparations of sex hormones and of state welfare agencies have been brought up to date. The sex problems of children, including masturbation, are discussed in the chapter on the external genitalia. The volume is well published in every way and should be in all medical libraries and in the libraries of gynecologists and pediatricians.

NOTICES

ANNOUNCEMENT

Dr. Benedict F. Massell announces the removal of his office to the House of the Good Samaritan, 25 Binney Street, Boston 15.

SUFFOLK CENSORS' MEETING

The censors of the Suffolk District Medical Society will meet for the examination of candidates at the Boston Medical Library, 8 Fenway, on Thursday, December 4, at 4:00 p.m.

NEW ENGLAND HOSPITAL FOR WOMEN AND CHILDREN

The monthly clinical conference and meeting of the staff of the New England Hospital for Women and Children will be held on Thursday, September 4, at 7:15 p.m., in the classroom of the Nurses' Residence. The subject "Sympathetic-Nervous-System Drugs, Old and New" will be discussed. Dr. Esther E. Bartlett will be chairman.

GRANTS AND FELLOWSHIPS IN CANCER RESEARCH

The Committee on Growth of the National Research Council, acting for the American Cancer Society, is entertaining applications for grants and fellowships. Applications for extension of existing grants in cancer research will be received until October 1, and applications for new grants until November 1. Applications for fellowships and senior fellowships in cancer research may be submitted until December 1.

Final decision on applications submitted during this period will be made in most cases soon after February 1. The grants ordinarily will become effective on July 1, 1948. Fellowships may begin at any time determined by the committee, although ordinarily these also will take effect on July 1.

During the last two years the American Cancer Society, acting on the recommendation of the Committee on Growth, has awarded one hundred and seventy-six grants and forty-seven fellowships, representing a total expenditure of some $2,700,000. The committee will continue to recommend support of biologic and clinical research dealing broadly with phenomena relating to growth, typical or neoplastic. In the formulation of this program the committee will be guided, as in the past, by the advice of some one hundred and twenty scientists grouped in twenty panels, comprising its sections on Biology, Chemistry, Physics, Chemotherapy, Clinical Investigation and Fellowships.

Communications regarding grants or fellowships should be addressed to the Executive Secretary, Committee on Growth, National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C.

SOCIETY MEETINGS AND CONFERENCES

Calendar of Boston District for the Week Beginning Thursday, August 28

Wednesday, September 3

*12:00 m. Grand Rounds and Clinicopathological Conference. (Children's Hospital.) Amphitheater, Peter Bent Brigham Hospital.

*Open to the medical profession.

September 2–6. American Congress of Physical Medicine. Page 610, issue of April 17.

September 2–7. International Cancer Research Congress. Page 340, issue of February 27.

September 4. New England Hospital for Women and Children. Notice above.

September 8–12. Third American Congress on Obstetrics and Gynecology. Page 340, issue of February 27.

September 8–12. American College of Surgeons. Page xv, issue of August 14.

September 11. Recent Advances in the Treatment of Infectious Diseases. Dr. Conrad Wesselhoeft. Pentucket Association of Physicians. 8:30 p.m. Haverhill.

October 6–10. American Public Health Association. Page 456, issue of March 20.

October 13–18. Medicolegal Conference and Seminar for Pathologists, Medical Examiners and Coroners. Page 242, issue of August 14.

October 29–31. New England Postgraduate Assembly. Copley Plaza Hotel, Boston.

February 6. American Board of Obstetrics and Gynecology. Page 242, issue of August 14.

April 19–23. American College of Physicians. Page xiii, issue of July 31.

May 6–8. American Association for the Study of Goiter. Page xiii, issue of July 31.

May 11–15. American Association on Mental Deficiency. Page 140, issue of July 24.

District Medical Societies

NORFOLK

September 23. Boston University Night.

October 28. Lahey Clinic Night.

November 25. Tufts Night.

January 27. Round-Table Discussion: Bleeding from the Alimentary Tract.

February 24. Obstetric and Gynecologic Night.

March 23. Harvard Night.

SUFFOLK

December 4. Censors' Meeting.